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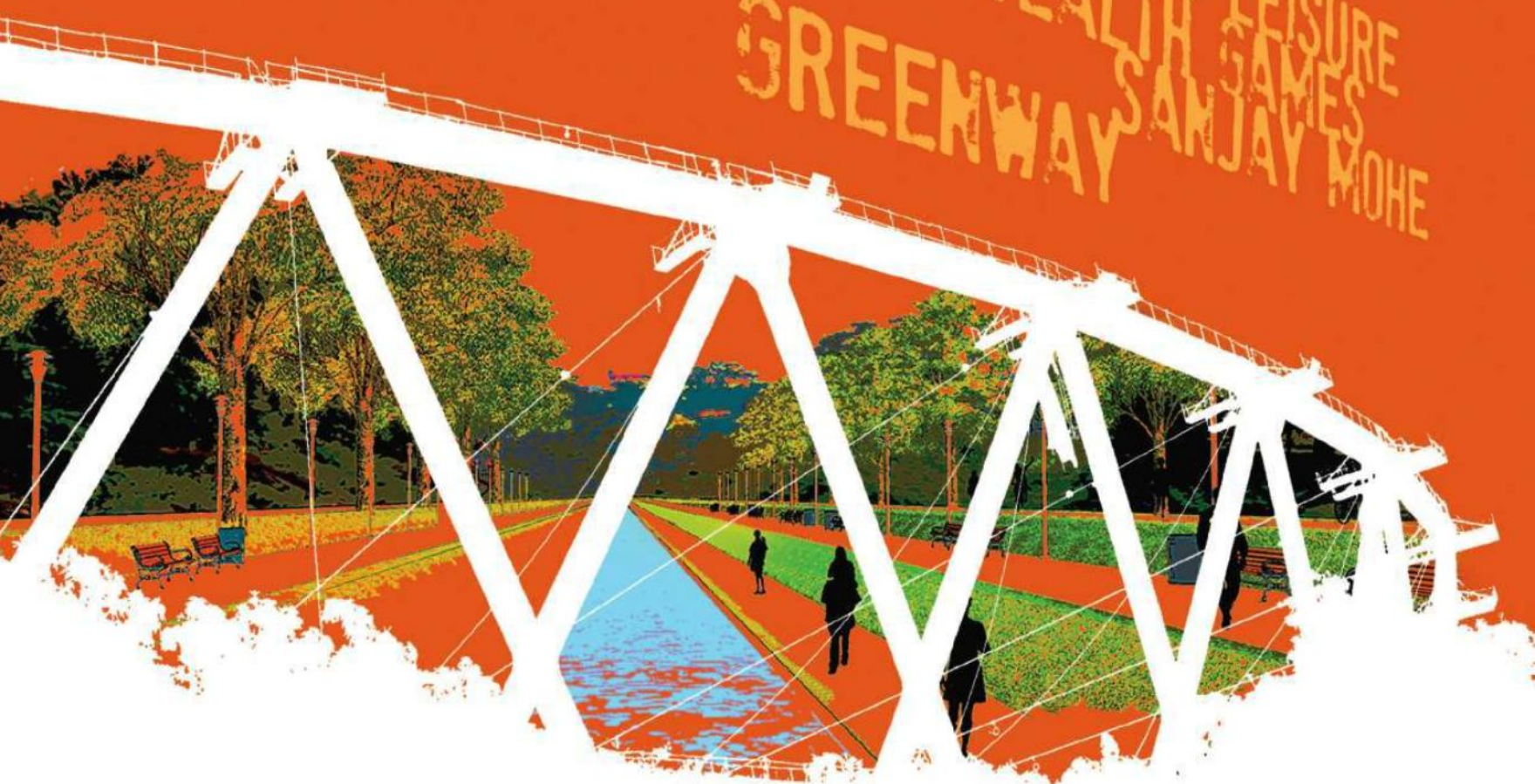
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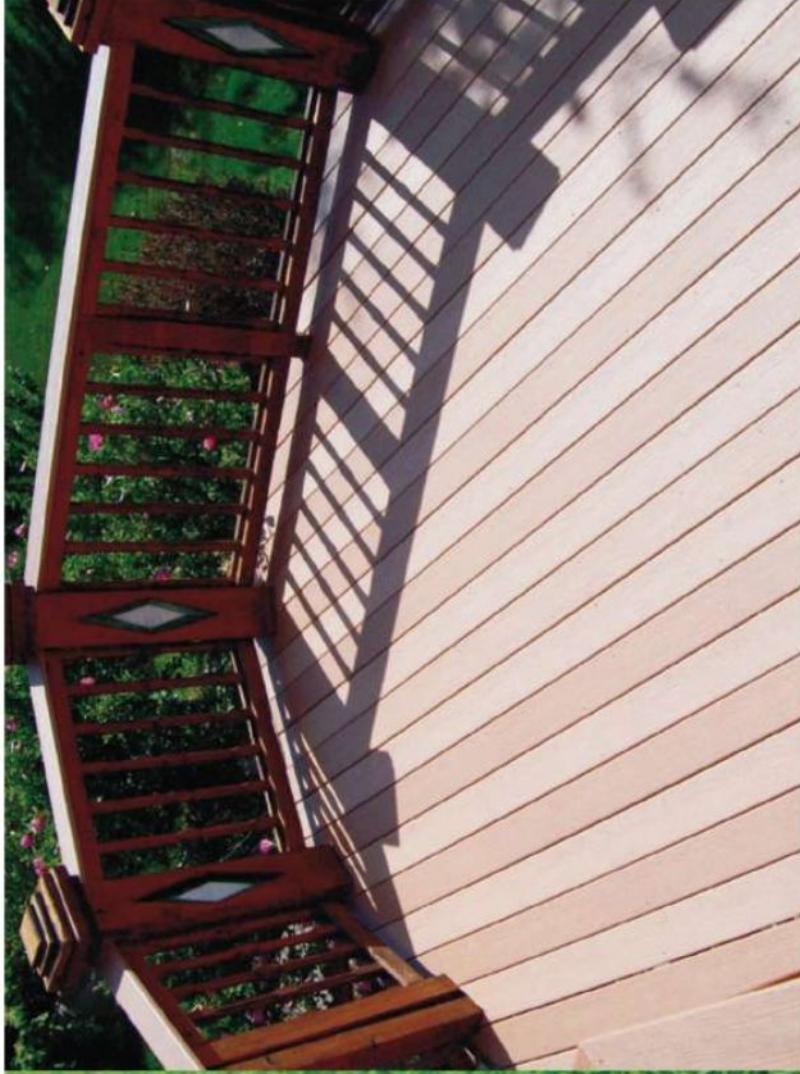
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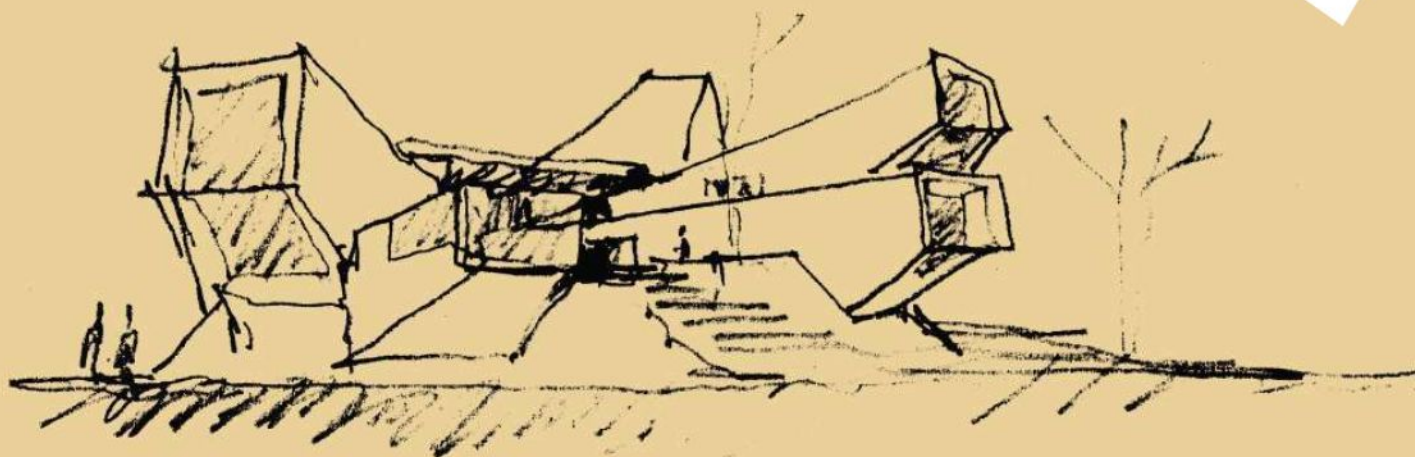
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The idea of Leisure (the theme of ISOLA Annual Conference 2010 held in Goa) has more to do with a state of mind than the ways in which to achieve it. We may experience it in our daily routine: a few moments of bliss in a busy day at work, a stroll across a neighboring park, or observing birds in a pool. Leisure is a time when time itself is not at work. Places and means of leisure sited in our daily lives, where we live and work make them more relevant and meaningful rather than these becoming commodities for the use and pleasure of a few.

This issue of the journal presents articles that take the idea of leisure away from mundane representations of the subject in projects of resorts, hotels and getaway farm houses. Leisure and recreation often overlap. Two featured projects exemplify the role of city public parks as spaces for active leisure and recreation.

At Osho Teerth Park, the landscape and environmental design work is an example of how often defunct, ignored and so called useless open spaces can

be transformed in serene landscapes with sensitive planning and design that give a sense of pride to citizens.

South Delhi Greenway describes a city scale unique vision of linking and developing linear open spaces along the city drains and creating usable open spaces of different scales and nature for neighborhood areas. It is an attempt to bring leisure and recreation closer to the public realm.

After ASIAD 1982, the capital is gearing up for one of the biggest sports events ever held in the country, the Commonwealth Games 2010. With the construction and renovation budget in Delhi already exceeding Rs 15,000 crores for the event, urban development and infrastructure works are taking place in the city at an unprecedented speed. Some of the main projects under way include the construction of 10 state-of-the-art stadia to cater to approximately 8,000 international athletes and over 10 million expected visitors during the event; the Commonwealth village covering an area of 118 acres; over 24

new flyovers, streetscaping works; a new international airport to accommodate 34 million passengers every year; a public transport system of 3,775 new low floor buses and Delhi Mass Rail Transit Corridor (Metro rail) spreading across 193 kms in the city .

Such a massive development in a thickly populated city of a complex character has its own set of issues including the alleged nature of works, missing the opportunity to address serious infrastructure concerns of the city, overruling of serious environmental issues of building of Commonwealth Village on the Yamuna river bed among others. With this issue we are starting a series of special sections on the event for our readers about key urban development works, discussions with design professionals and officials of development agencies working on these projects and interactions with other experts and citizens concerned about the city.

Editors





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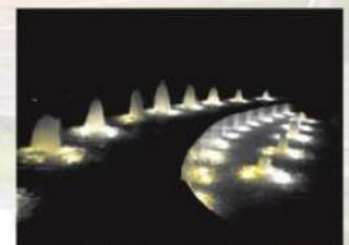
Sheet Waterfall  
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at Delhi Metro.

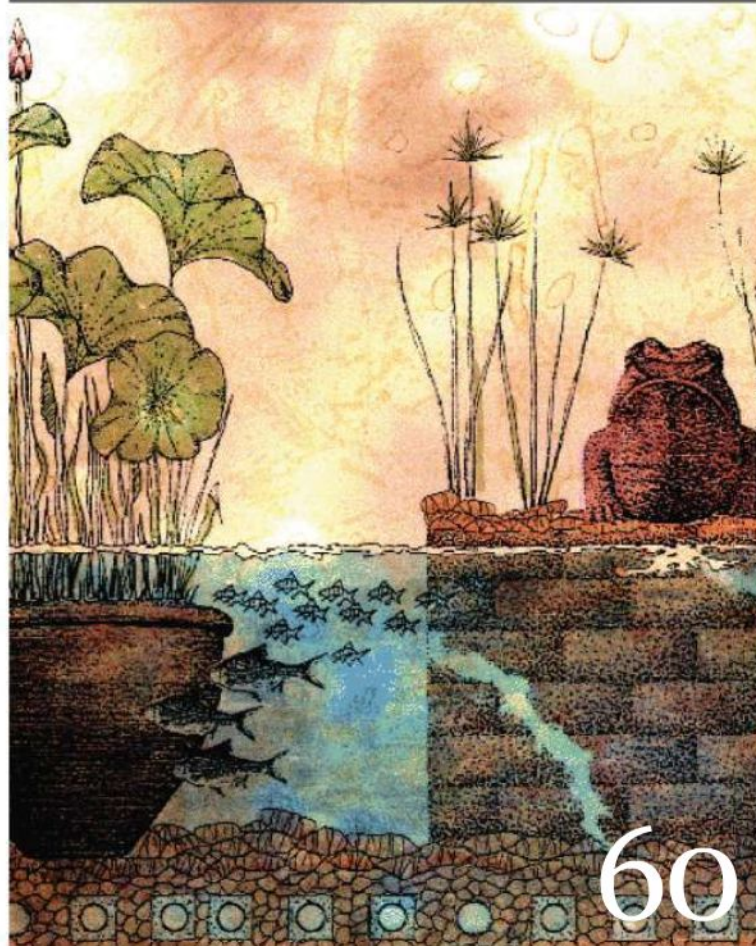
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**EDITORS** Brijender S. Dua Architect | New Delhi  
Geeta Wahi Dua Landscape Architect | New Delhi

**ADVISORY EDITOR** Adit Pal Landscape Architect | USA

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**DESIGN | LAYOUT** Grafiniti | Sumit Arora

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MAHARUKH, AILANTHUS EXELSA**

to laugh  
like a brook,  
as it trips  
and falls  
over the  
stones  
on its way  
to sing  
through  
the light...

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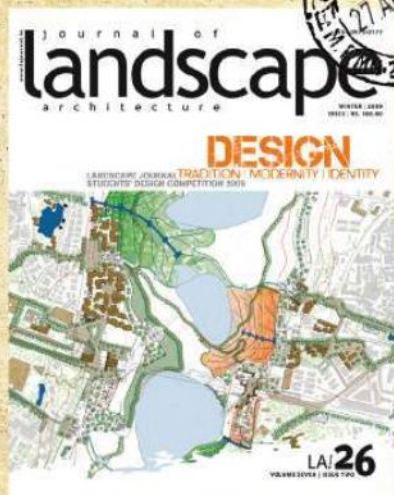
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## Conservation Challenges and the Dynamics of a Living Heritage

*"Tradition-Modernity-Identity"... It was indeed a pleasure to read works and features on an interesting topic that has always remained a point of debate, and dilemma, among the design circles, especially in India – respecting the past, looking at the future, while at the same time working in the present! And, since the landscape profession, it seems, is yet to grow up from its self-imposed 'infancy' [even after three decades!], I feel that the answer to this complex question could, in fact, set a most appropriate direction for many young landscape practices today.*

*I must also admit that among the competition entries [winning entries featured in the issue, and all displayed at SPA, New Delhi last year which I had the chance of seeing], it was heartening to see that quite a few addressed the theme with great maturity and approach. If the competition was an attempt to explore and start a thinking process on the issues relating to tradition, modernity and identity in landscape design in India, I think it is a positive start, which needs to be kept alive with more such debates and competitions.*

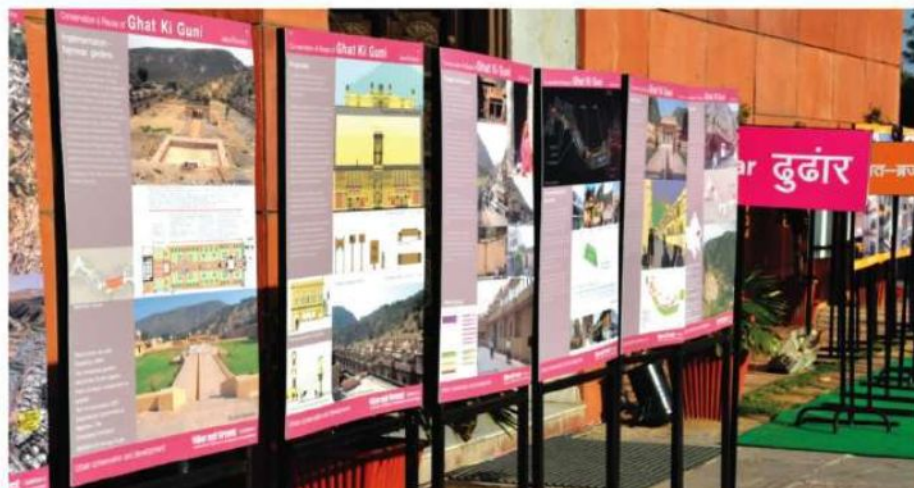
**Bhagya Sonali Filipe, Margao**

*Why don't you start a regular section on articles for residential scale like home gardens, kitchen gardens, green balconies etc.?*

**Sheela Das, Dehradun**

*Articles under the sustainability section make a good read. Do try to give some information about green technologies and green products in the section. Showcasing live case studies, especially from India, would also be useful for the readers.*

**RL Varma, Jamshedpur**



Rajasthan, with its rich cultural and architectural legacy presents some of the most unique examples of heritage conservation. In the last decade, conservation works initiated by public and private sector across Rajasthan have created benchmarks at different levels. Several private initiatives for the conservation of monuments have received international accolades and support such as the UNESCO Asia Pacific Heritage Awards, conservation grants from The Getty Foundation, the Prince of Wales Foundation etc.; parallel government associations with the World Monuments Fund, works of the Department of Archaeology and Museums and the Amber Development and Management Authority and others represent a large scale conservation trend undertaken by any State Government in India till date. At the same time, the community and craftspeople of the state have evolved indigenous methods and norms for the protection and survival of their heritage, complimenting the government initiatives.

"Rajasthan – Conservation Challenges and the Dynamics of a Living Heritage", the first in the Vikas and Virasat series of travelling exhibitions was organized by JVF-DRONAH Heritage Studio with support of Government of Rajasthan as part of the Annual Jaipur Cultural Festival, at Jawahar Kala Kendra in Jaipur in third week of January. It was intended to be a step towards generating a meaningful dialogue on cultural heritage between professionals in the field and the general public. It highlighted the progress in conservation practices and approach over the past decade.

The exhibition comprised of 30 projects selected from all across Rajasthan. The attempt was to cover all nine cultural regions of Rajasthan and showcase projects of varying scales and types. The works were contributed by various professionals and organizations who have been working on conservation projects in Rajasthan.

A large section of the exhibition was devoted to the Dhoondhar region, with several projects from Jaipur and Amber. These projects varied from urban regeneration initiatives such as those in Ghat ki Guni and the Jaipur Walled city to comprehensive proposals for internationally significant heritage sites such as Amber Fort, the Jantar Mantar and the Hawa Mahal.

The selection of projects and case studies across the nine regions of Rajasthan was intended to be a representative, but not definitive, cross section of current practice in heritage conservation in the state. The display included case studies in urban conservation, revitalization, historic streetscapes, landscapes, heritage education and community participation.

Projects focusing on the cultural traditions in Rajasthan such as the Stone Artefacts Promotion Project that documents the stone crafts of the state and projects involving community initiatives and heritage education were also represented.

The primary aim of this exhibition was to provide a general overview of heritage resources and conservation initiative undertaken in the state of Rajasthan over the last decade.

**– DRONAH, Gurgaon**



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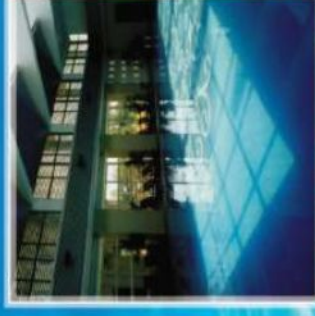
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## Landscape and Identity

Landscape study of Forts in Maharashtra: Joint Studio Programme



Forts in Maharashtra acted as important political centers with their main function as defense. With the passage of time and change in the context, these forts have lost their connection with the past and have become totally redundant. In some places the entire economy sustains on a fort being there and tourists frequenting it in large numbers. Many number of 'forts' is a major contributor in defining the identity of landscape of Maharashtra. But a well explored area by the historians, trekkers, tourists still remains unexplored by the landscape architects in its comprehensive understanding.

A joint studio was organized in the month of March 2010 between students of Landscape Architecture programmes of Dr BN College of Architecture, Pune and School of Planning and Architecture, New Delhi on the subject. It was an effort to make students understand the landscape structure at regional level and its relationship with the component of 'forts' in Maharashtra, as a thoughtful manmade overlay. The exercise introduced to the participants, the values, issues and the contemporary responses by the authorities, experts, local users associated with the 'fort' areas. The concern of the joint studio was to explore a possibility of reestablishing their relevant connection to the present and future context.

The typology of the forts, comprising of 'Sea Fort', 'Hill fort' and 'Land Fort', shows a unique understanding of the landscape setting. Under the programme, students visited 3 types of forts – Land/Mixed/(Mishra Durga) fort – Daulatabad, Hill fort (Giri Durga) – Raigad and Sea fort (Samudra durga) – Janjira, and carried out the mapping and inventory of landscape components, to know the landscape status of the forts and its surroundings.

The exercise looked into the aspect of landscape giving identity to the region by studying the various typological settings of the selected representative forts in Maharashtra.

Prior to the visits, ground work and initial studies were done by Students of BNCA followed by a two days-lecture series for all the students by renowned historians, archaeologists, geologists, botanists and other experts including Prof Ghanekar, Mahesh Tendulkar from Bharat Itihas Sanshodhak Mandal (BISM), Sachin Joshi, Chandorkar, Dr. Anand Datar and Dr Mandar.

The students worked under the guidance of conservation architect Sharveya Dhongde along with faculty of the college. Reviewers of the work included Narendra Dengle, Jayant Dharap and Dr Abhijeet Natu.

– Prof. Shubhada Kamalapurkar, Department of Landscape Architecture, BNCA College, Pune



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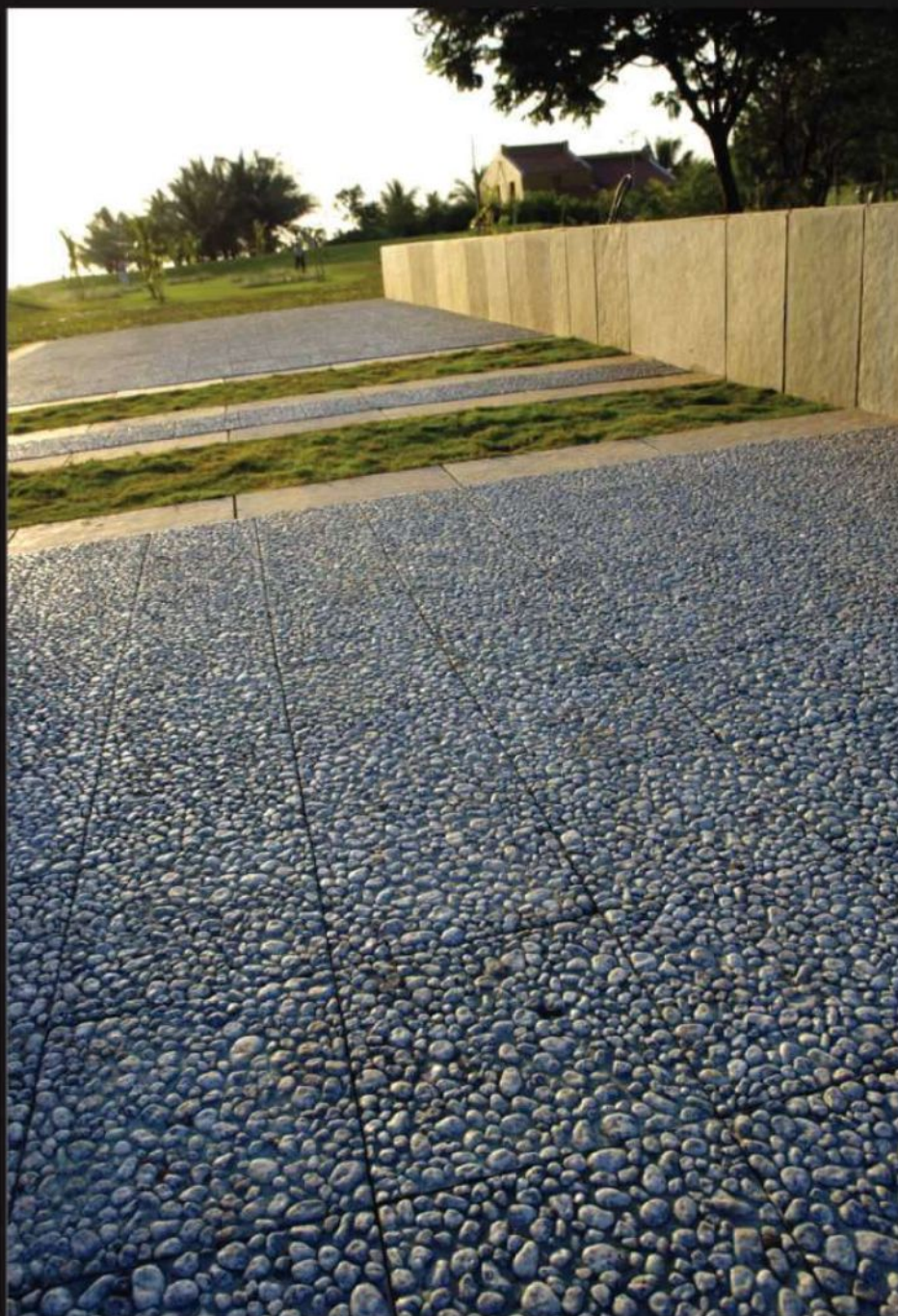
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## IUDI Pune Centre launched



The Pune Centre of the IUDI was launched in March this year with the participation of heads of Institutions, NGOs, Corporate

Houses, architects, planners academicians and students in a modest ceremony. Presentations on various facets of the field including its definition, its role in the city planning, showcasing of few live examples, ongoing projects in which urban designers are already playing an active part, issues of the profession etc. were made by professionals. Dwaipayan Chakravarty made a short presentation on the definition of Urban Design. Waterfront developments of Mumbai, the various methods employed and principles that guided works were elucidated in a presentation by P K Das. His case studies culminated in the Nariman Point proposals that have been recently approved by the Government of Maharashtra.

Vishal Jain, representative of Janwani a public outreach program, spoke about the Development Plan process, its timing, relevance, methods and alternatives. K T Ravindran stressed upon the need for inclusive and comprehensive approaches to the conception and delivery of urban physical as well as governance systems in contemporary times.

As the first initiative of newly formed IUDI Pune Chapter, a joint programme was organized in collaboration with MCCIA's Janawani on the subject of Mass Transit System for the city of Pune. A study on the subject conducted by students of PVPCOA Pune was presented by Prof. Prasanna Desai. A proposal of Pune Municipal Corporation in this regard was also discussed. The presentation highlighted the various aspects of the projects including the routes, details of costs, various financial models being looked at.

—Kiran Kalamdani, Urban Designer, Pune

## Historic Building Conservation and Sustainability



Compiled by **Adit Pal, LEED (R) AP** and **Shobita Punja**  
Published by **INTACH, Jan 2010**

A booklet entitled 'Historic Building Conservation and Sustainability' was released in January 2010, by Smt. Sheila Dikshit, Chief Minister of Delhi at IIC, New Delhi at the inaugural session of INTACH's silver jubilee celebrations.

Since its inception 25 years ago, the focus of INTACH as India's largest membership organization has been on the conservation of natural, cultural, built and living heritage through its chapters in over 150 cities in India and abroad. The strategies adopted by INTACH for conservation has been on many levels – policy, projects, publications, training and education. Through the Charles Wallace scholarship programme training of young conservation architects and material conservators have provided much needed expertise in this field.

To support the growing conservation movement INTACH has initiated the publication of a series of books on conservation that are specific to Indian conditions. A set of publications were brought out on the listings conducted by INTACH of heritage components of important cities such as Delhi, Agra, Chennai and Kolkata. The series called Conservation Briefs for professionals is on topics as varied as 'Lime Mortars', 'Conserving Timber Architecture' and how to create an 'Inventory for Historic Gardens'.

The booklet on 'Historic Building Conservation and Sustainability' is designed as a brief guide with a checklist of good practises aimed at meeting 21st century challenges of climate change and responsible living. The check list covers topics such as construction waste management and reuse, energy conservation, light and air quality control for a heritage conservation project. Simple steps to create sustainable landscapes around heritage properties, suggestions for the use of indigenous plants and trees and how to reduce the island effect are also mentioned. Strategies for landscape water management and building water management are mentioned as it is felt that all heritage conservation projects undertaken in the future must incorporate these concerns. Maintenance of heritage properties still remains the weakest link and stress is laid on preventative maintenance as the simplest most sustainable manner to protect historic structures.

The checklist is by no means exhaustive, for this publication is meant to inspire the evolution of more innovative, locale specific solutions.

—Heritage Education and Communication Service, HECS, INTACH

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## +91 Residences



**+91 RESIDENCES** Exhibition was presented at Goethe-Institut/Max Mueller Bhavan, Bangalore between Feb 19 and Mar 06, 2010. The exhibition was inaugurated by Sanjay Mohe of Mindspace Bangalore. It featured 91 independent dwellings built in the last decade, 19 works-in-progress and a model display of houses designed by over 75 architects in over 25 cities and towns across India.

Featured residences differed in the nature of their locations – from dense urban sites to picturesque locales. The architectural solutions these projects offer highlighted various issues confronted by the architects ranging from the grapple with dichotomies (of say traditional vs. modern and local vs. global), the move beyond modernism, the derivation of forms based on generative geometries, experimentation with conventional and alternative building materials and technology and address of site specifics.

The exhibition also aimed at viewing drawings and models as “architectural constructs” as much as buildings. As representations of an architectural design, these portray an individuality that could coincide or be compared with the character of the project or the approach of the architect.

The quality and technique of the variety of representation approaches by the contributing architects offered another dimension for discussion and deliberation.

A presentation by Andreas Bracht and Achim Aisslinger, and8 ARCHITEKTEN, Hamburg, Germany of their works and a two-day workshop on modular housing led by them were part of the events that accompanied the exhibition planned by the Max Mueller Bhavan, Bangalore in association with InCITE.

A polemic on housing BUILDING DWELLING THINKING aimed to complete the spectrum of contemporary residential architecture in India by looking at group housing against the backdrop of the single-family housing units represented in the visual display.

A brief presentation of projects and ideas by Bangalore-based Architects [Moderator: Kiran Venkatesh [InCITE / InFORM Architects Pvt. Ltd.], Presenters: Bijoy Ramachandran [HundredHands], Chitra Vishwanath [Biome Environmental Solutions], Dominic Dube [DDIR Architectural Studio], Edgar Demello [Edgar Demello Architects], Shashi Bhooshan [B S Bhooshan & Associates], V Naresh Narasimhan [Venkataramanan Associates] ) was followed by a critical exchange between the presenters and the audience. A theme around the notion of housing was developed and issues of individual vs. community, smart roofs, identity, etc. were addressed.

The +91 RESIDENCES premiere in Bangalore was enabled by the support of WIENERBERGER and REHAU.

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*InCITE is engaged in the dissemination of information on contemporary Indian architecture through events and publications. For more details: [incite.co.in](http://incite.co.in)*

## Harmony and Prosperity

IFLA 47TH WORLD CONGRESS  
Suzhou, China | 28–30 May 2010



China's rich and diverse natural and cultural resources and belief in seeking harmony with nature are the basis for its philosophies, and way

of life. Chinese landscapes and gardens strongly reflect this idea, and Chinese traditional gardens have been honoured by being referred to as “the Mother of World Gardens”. In the past 60 years, China has made tremendous achievements in all areas of landscape architecture, especially in national and provincial Garden City actions, urban green space system planning, design and construction, preservation of historic gardens, and national parks stewardship and management.

IFLA 47th World Congress, with its theme **Harmony and Prosperity – Traditional Inheritance and Sustainable Development**, is being organised by the Chinese Society of Landscape Architecture and the International Federation of Landscape Architects. This is scheduled to be held in Suzhou, China from 28–30 May 2010.

The Congress will focus on cherishing and protecting traditional natural and cultural values. It will try to balance tradition and development in today's society in the broader context of rapid globalization and urbanization. Suzhou is an excellent example of achieving this balance – an old city in which historic sites, traditional gardens and successful modern landscape development are mingled together.

Seven sessions include: (1) Protection of Natural and Cultural Resources; (2) Eco-system Rehabilitation/Restoration/Development; (3) Landscape Planning & Design; (4) Landscape Architectural Education; (5) Sustainable Landscape Construction & Technology; (6) Landscape Stewardship and Management; and (7) Landscape Planting.

Congress website: <http://www.ifla2010.cn>

**Chinese Society of Landscape Architecture**

9 Sanlihe Road, Beijing 100835, China

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A place comes into existence when humans give meaning to a part of the larger, undifferentiated space. Any time a location is identified or given a name, it is separated from the undefined space that surrounds it.

Yi-Fu Tuan, Chinese Geographer

# SENSE of PLACE

## LA! JOURNAL ESSAY WRITING COMPETITION 2010!

Nishat Bagh, Shimla. Photo Courtesy: Prof. James L. Westcott  
design: Sumit Arora | graffiti

### Theme: Sense of Place

Certain places have a sense of place due to a strong character and identity that is deeply felt by people who inhabit them and to those who visit such places. The character may be due to natural or cultural features or both. The essay may communicate the tangible physical aspects of such places as well as the intangible experiential dimensions and how these can contribute to unique experiences and memories of that place. It's about a place which you have experienced. You are invited to share that experience in words.

### Categories of Places

Natural landscape region / a rural or relatively unspoiled or regenerated landscape / a designed landscape / a building and landscape in India.

### Criteria for Selection

Content – critical and creative thought.  
Clarity in expression – grammar, organization, and craftsmanship.  
Proper use of citations and illustrations.

### Eligibility

Students studying in Indian universities and all individuals residing in India, who are interested in spatial design disciplines and other creative fields.

Please note that only single author entries will be accepted.

### Jury

**Ranjit Sabikhi** | Architect

**Dr Priyaleen Singh** | Historic Landscape Conservation Architect

**Adit Pal** | Landscape Architect

### Awards

The five best essays will receive Rs. 3,000/- each with a merit certificate. The judges and organizers reserve the right to award less than five essays if the need arises.

*Selected entries will be featured in the upcoming issues of the journal. The winners will also be invited to write on various topics and themes for future issues of the journal.*

### Submission Requirements

#### First Stage

An abstract of the essay  
Word limit: 250–300 words

#### Second Stage

Full essay with a bibliography  
if necessary  
Word limit: 1500–1800 words

Essays with photographs/ illustrations to be submitted via email only with the completed registration form. The form (to be submitted along with the abstract) and further details of submission formats are available as .PDF files on [www.lajournal.in](http://www.lajournal.in)

**There is no registration fee for the competition.**

### Timelines

Submission of Abstracts [Stage One] **07 May 2010**

List of Short listed Entries for Second Stage **20 May 2010**

Submission of Final Essays [Stage Two] **20 July 2010**

Announcement of Results **30 August 2010**

### Organized by

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## Auroville Green Practices

SEMINAR & SITE VISITS | 26-27-28 AUGUST, 2010



Auroville, the international township near Puducherry in India is well known for its green thinking and sustainable practices. More than 30 Auroville experts are presenting their recent projects and experiences in this seminar which also includes visits to demonstration sites. Topics will broadly cover landscaping, water harvesting, waste management, organic food, renewable energy, appropriate building technologies and environmental awareness. The event is meant for project developers, consultants, architects and decision makers involved in the planning of eco-friendly townships and residential complexes. The seminar has a limited capacity of only 100 places to facilitate close interactions. Please register well before 31 July 2010 to ensure a place.

Contact and Details at:

**Auroville Consulting, Saracon Building**

**Kottakarai, Auroville 605101 Tamil Nadu, INDIA**

Email: [greenpractices@auroco.in](mailto:greenpractices@auroco.in)

Website: <http://www.auroco.in/greenpractices>



CALL FOR ENTRIES

## Best Private Plots 10

**Best Private Plots 10** recognizes exemplary design of sustainable private open spaces, highlighting the garden as a place of innovation, as a space for creative expression and action, as contemporary dialogue between architecture, ecology and landscape.

The international competition is being held for the fourth time since 2006. The prize honours exceptional achievements in the design of sustainable private outdoor space and gardens, which have been completed after January 1st, 2000.

The award criteria include idea, conceptual and artistic quality, ecological quality, use of plants and materials, relationship between inside and outside, delimitation of space and organisation of open space, technical planning, sustainability. Special attention will also be given to the individual diversity of use and functionality. The open space must be clearly identifiable as intended for private residence and use.

This is an open international competition. Landscape architects, architects, garden owners, designers, florists, gardeners, artists, plant nurseries and landscaping firms, as well as teams including a combination thereof are eligible.

For entry forms, competition brief and more details: [www.privateplots.at](http://www.privateplots.at)

**DEADLINE FOR ENTRIES: May 31st, 2010**

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(a) passion for Nature and Design of all kinds and  
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# *Leveraging* LEISURE

L A N D S C A P E S   A N D   W E L L B E I N G

ISOLA ANNUAL CONFERENCE | GOA , JANUARY 29-30 2010



Leisure time – a designated perquisite of modern living – plays an important part in enabling mental and physical well being. Open spaces and natural landscape units within and around a settlement enable community interaction during social occasions or may simply exist as recreational spaces. When these trends of the connection between leisure and leisure space are examined in today's context, we encounter a growing fragmentation and multiple designations of user, space and time.

The ISOLA Annual Conference 2010 organized on the theme of **Leveraging Leisure: Landscapes and Wellbeing** in Goa attempted to explore the change in the meaning and interpretation of the term 'leisure time' and leisure activity.

The conference also examined the issues of inclusiveness of leisure spaces and envisaging exciting ways to engage people while addressing larger concerns of the landscape.

The deliberations were broadly divided into four categories namely Exploring Perception, Managing Paradoxes, Negotiating Scales and Attempting Shifts.

The conference was declared open by **Digambar Kamat**, Chief Minister of Goa. In his inaugural address, he emphasized upon the significance of the profession of landscape architecture as a strong tool to preserve the environment and ecosystems.



The keynote address of the conference was delivered by **Prof. EFN Ribeiro**, renowned planner. The address largely referred to state of Goa as a leisure destination. He talked about the inter relationship of natural and built features of the region of Goa, its uniqueness in terms of its location, its climate responsive architecture among other aspects. He also deliberated on the Regional Planning of Goa RPG 2021, its components, salient features, the hierarchy from zonal plan to local area plans, its participatory and all inclusive framework and approach that can be a role model for other such regional plans.

## Exploring Perceptions

**Dr Uma Vaidya**, a Sanskrit scholar, presented a paper on landscape architecture in ancient India in which she elaborated on the references to 'designed' landscapes in literary sources of that time. She noted that ample information is available on ancient Indian landscape design in Sanskrit literature about places such as amusement parks, play gardens, mounds, summer houses and even resorts next to the ocean. Literary references by Kalidasa and other poets provide detailed records of types of landscapes both natural and recreated – in different periods of history with the objective of inciting a change in the mood of an observer. These landscapes were meant to engage in leisure activities and foster wellbeing, while creating harmony between landscape environment and built form. Visual representations depicting some of these landscapes were also given through various hand made paintings specially created by an artists for this conference presentation.

**Ravi Hazra**, principal of the Goa College of Architecture, defined leisure as an instrument for change of mood. On a philosophical note, he stated that leisure entirely depends on one's perception and is a fluid combination of space, nature and related activities.

Taking a case study of Goa, in his paper, 'A Mega Landscape - Goa', the characteristics ranging from geology to physiology of Goa were presented along with photographic display of various moods of the place. He observed that Goa has changed radically in the 19th century with the four landmark stages of environmental drivers which influenced the change namely mining post 1945, urbanization post 1961, industrialization post 1971 and tourism post 1972. In order to

make it a tourist destination, he stated that the natural resources of Goa have been exploited with destruction of the rich watersheds, pollution of traditional ponds and lakes, deforestation, cutting of the lush green hills, reclamation of the eco-fragile flood plains of the major estuaries, destruction of the fragile ecosystem, levelling of the coastal sand dunes, fragmentation of the natural habitats; interference in the natural migratory corridors of the wild animals. He called upon professionals to address these issues in their future projects in the region.

## Managing Paradoxes

**Bill Bensley**, landscape architect and principal, Bensley Design Studio in Bangkok, spoke about the idea of leisure as incorporated in many of his projects. He said that the professional stakes and the environmental responsibility that a landscape architect is forced to balance is of critical magnitude. The urge to demonstrate this balance is a vital standpoint-more of a desirable challenge rather than a problem for any landscape architect. He noted that such a stance may require critically examining one's approach to design to wisely meet environmental concerns and development aspirations.

Retaining existing mature trees on a site, use of local materials, techniques and technologies, sensitivity of the building vocabulary towards local climate and culture were some of the issues discussed. He concluded that leisure comes with a set of paradoxes and the designer has to make a right choice to maintain the equilibrium. Using leisure-related spaces in distinctly different scales and landscape settings, he discussed the paradoxes and design approaches adopted for his projects.

**Nimish Patel**, architect based in Ahmedabad presented a talk titled 'Images or Experiences, a Dilemma of Designers', in which he pondered upon the definition of leisure as being a deliberate action with freedom, without haste. He observed that in the past few years, the leisure and hospitality industry has undergone further divisions, with the concept of wellness emerging as the prominent category. Wellness needs to be marketed through images and descriptions. Its processes have to live up to the created expectations by the marketing efforts through the actual experiences of its users. He said that often images and descrip-

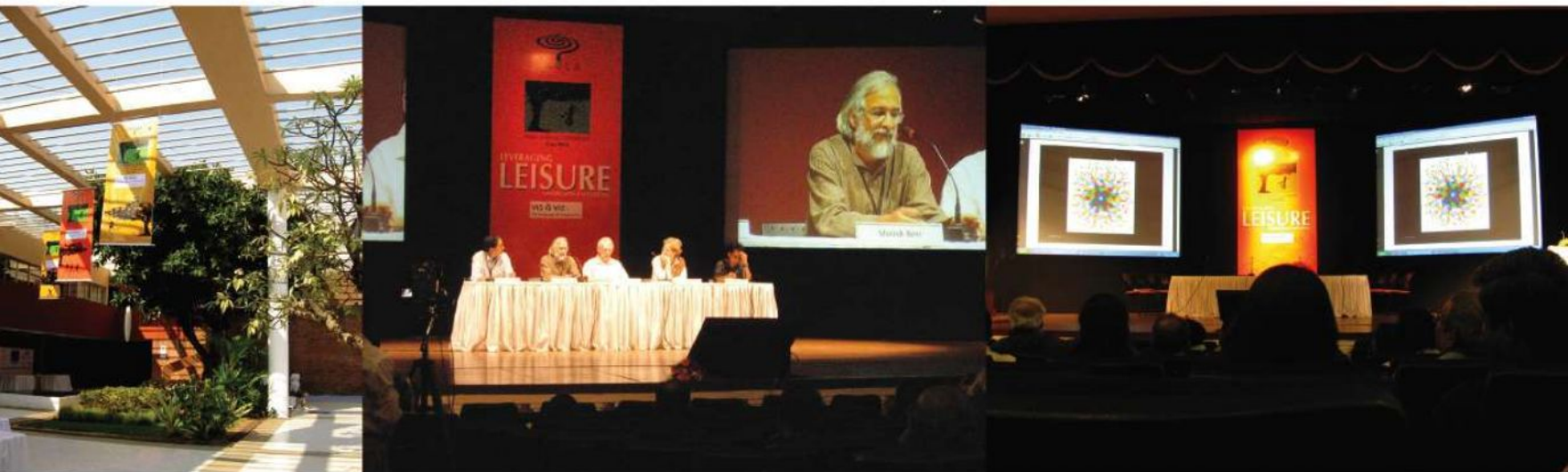
tion influences a client's choice more than the actual experience or feel of space. This raises a major challenge or dilemma for the designers. Nimish shared his practical experience of relationship between creating contextual image and experience along with the involvement of and acknowledgement to local artisans, contractors and craftsmen.

**Dean D'Cruz**, Goa-based architect, in his paper titled 'the Greening of Landscape Architecture' emphasized the 'greening' of the landscape development. He emphasized the use of elements made of locally available materials, designing interior and exterior spaces to respond to the climatic conditions, use of forms and colors as inspired from the surrounding landscapes among other principles. The speaker also threw light on the various possibilities by which one can maintain or improve the ecosystem of any place through landscape rather than using landscape as a tool for beautification of buildings.

The idea of visualizing footpaths as inclusive urban spaces was explored in the presentation titled 'City Streets and Equitability' by **Shreya Gadepalli**. She stated that foot paths are the public spaces that all people meet as equals. In essence, they are the most important element of democracy. Gadepalli's presentation highlighted that a city should be meant for its people and not for traffic. She explained that a city can be broadly classified into one of these categories: traditional, invaded (by the car), abandoned and reconquered. In India, most cities are either invaded or abandoned. People across the world-Latin America, Europe, US and China are in the dramatic process of reconquering their cities and claiming their right to walk and bring life back to their streets.

She showcased the cities such as Bogotá and Colombia as role models for a sustainable and equitable future. She observed that a good city is one where people like to spend time outside, near clean public spaces for leisure activity, rather than sit at home and watch television. If a city is good for its children and elderly, the others will do just fine. She called upon the designers in India, the urban planners, designers and landscape architects to be the catalysts in bringing back the human dimension back into architecture and city planning and making the streets and public spaces happy places.





## Negotiating Scales

**Manuel Peniche Osorio**, representing the office of renowned Mexican landscape architect Mario Schjetnan, discussed the notion of open space and ecology in his paper titled 'Culture, Education and Governability'. Open spaces, he said, are meant to organize and structure the city where as natural systems like water features and green areas provide breathing spaces. The speaker presented several projects ranging from recreational parks to ecological parks and residential developments, each of which is planned based on the concept of accessibility for people to open public spaces and through these, access to nature.

**Dr Shyam K Bhat**, a psychiatrist based in Bangalore discussed in detail the aspects of human psychology and leisure. He observed that landscape architects intuitively understand that work affects emotions and psyches; aesthetics is a matter of perception and psychology. He elaborated upon the concepts of landscape architecture through the perspective of psychology. He stated that aesthetic senses are a part of the human brain. Citing examples from studies ranging from birds, mammals and humans he showed new aspects of human nature that relates directly and indirectly to landscapes. The topic of discussion explored new ways of how humans perceive landscapes.

In his paper titled 'Articulating Difference', Bangalore based architect **Mohan Rao** discussed how leisure spaces today are consid-

ered as a 'space of consumption' in the urban fabric and hence can become a major base for infrastructure development. The idea of recovery of spaces from absolute spaces in the society to productive lands is to be considered as a process rather than a solution. The speaker demonstrated his idea with several examples where this concept works on regional as well as local scales.

## Attempting Shifts

**Shirish Beri**, architect based in Kolhapur, in his lecture titled 'Leisure - Rejuvenating, Reinventing Life' attempted to find leisure in all routine activities. He stated that in the present day world, leisure occurs at a certain cost but nevertheless these spaces remain lifeless due to lack of integrated landscaped spaces. It is left to the designer's choice whether leisure spaces can be an inclusive one or that of an exclusion one. He observed that leisure spaces should be able to bring people closer to nature, closer to each other and above all, closer to life. Need doesn't arise for a specialized leisure space but day to day mundane spaces can also be leisure spaces, he observed.

**Richard Cass**, landscape architect in Liverpool, gave a lecture on 'Environmentalism and Urban Renewal'. With the rapid growth in urbanization in the world there has been excessive impact on the earth's natural ecosystem and resources which has created a disconnect between the way people live and their surrounding natural environments. The speaker presented projects, pro-

posing leisure spaces, which were mainly sites for regeneration of self-sustaining ecosystems from post-industrial landscapes, particularly mined sites. The projects also followed three themes for the stages of development emphasizing on renewal, regeneration and repairing of damaged ecosystems and green infrastructure. These include the creation of 'post-industrial' landscapes, particularly in Britain, where derelict and failing industrial and urban areas have been transformed into healthy and productive new places. These include parks, recreation and sporting facilities (including the London 2012 Olympics), housing areas, waterfronts and ecological areas.

**Margie Ruddick**, landscape architect in Philadelphia, showcased few of her projects in India to emphasize the type of approach that should be adopted in any new landscape project including sensitivity to local flora and fauna, use of local technology and materials. Changing definition of word 'Leisure' was also being demonstrated by two case examples one of which is the Shilim retreat in Western Ghats where the designers' goal is to give visitors a sense of connection to the landscape which connects them with the natural world in a meaningful way. The other example shown was studio called 'The Hilltop Steakhouse Studio', in which students of Harvard's Graduate School of Design participated in 2005. The studio focused on a one-mile commercial strip outside of Boston, which is surrounded by one of the largest wetland systems in the United States Northeast. The studio worked on the idea





that well being depends on the natural world and the commercial world working together.

**Adit Pal**, landscape architect in Palo Alto, in his paper titled 'Landscapes and Health' emphasized upon the idea of landscapes that encouraged healthy living. He noted that easy access, or lack thereof, to opportunities to exercise safely outdoors likely has a direct bearing on health and wellbeing. Recent studies in Europe and the USA, he said have shown that easy access to outdoor recreation can play a significant factor in better health. He observed that last five decades have seen urban development in the United States leverage the automobile over other modes of transport, resulting in pedestrian and bicycle unfriendly cities and suburbs. The last decade however, has seen communities all across the country investing in trails and greenways – following an older European trend. In developing countries like India, landscape, while correctly, is seen as an urban amenity for obvious reasons, is provided in isolated pockets as a percentage of the urban area and not seen as an open-space network integral to the physical infrastructure of a city or the health and wellbeing of its inhabitants. His presentation discussed the role of green infrastruc-

ture and open space networks – specifically greenways, trails, bicycle corridors and the role these play in providing opportunities for exercise which is no longer seen as separate from leisure or as a luxury. Case studies were discussed from the San Francisco Bay region which has long been known around the world for its healthy communities.

The closing panel discussion was planned to offer diverse views on the conference themes. The panelists, with varied age, gender, geographical, and professional backgrounds and the panel chairperson, **Dr Shishir R. Raval**, offered varied perspectives and engaged the audience with a focus on issues of local planning, role of landscape architecture education, and future of landscape profession.

At the conference, citations and mementoes were presented to the winners of ISOLA 2010 Honors and Awards. An exhibition of the prize winning entries was also organized at the venue. The post conference book of last year's ISOLA Annual Conference at New Delhi titled 'Instant Cities' was released.

The next ISOLA Annual Conference is scheduled to be held in Ahmedabad.

*Kala Academy, Panaji [Goa] provided the ideal venue for the 2-day conference that included presentation sessions, discussions and exhibition of prize winning works.*



Report compiled by **Aditi Pai, Shruthi A Murthy** and **Smita Navda** – students of Masters in Landscape Architecture programme in CEPT, Ahmedabad

Photographs by **Shruthi A Murthy** and **grafiniti**



M. Shaheer

# PARADISE *in* PARADISE



*'...the whole surface of the ground is grass and trefoil, so much so that to lay a carpet on it would be superfluous and in bad taste..'*

*Memoirs of Jahangir*

The natural wonders of the Kashmir valley inspired the Mughals to create gardens that represent the final blossoming of a tradition stretching back centuries to the crafts of horticulture, water management and indeed, carpet weaving in Persia and Central Asia. Their aesthetic significance lies beyond the sum of their elements, visually enticing as these are; examined in a certain way, they offer lessons for contemporary design, and at a philosophic level, insights into the relationship between man and nature.

## Garden Carpets

On the banks of the Dal Lake, the formal garden spreads like an enormous exquisitely patterned carpet, seeming to unroll gently down the hill-side to the lake-edge, taking with it the rippling, cascading waters channelled from a natural spring; elsewhere, in the distant plains, there is another kind of garden, more often than not by a river-side, a place to pause.

Carpet imagery fits well with gardens belonging to the Persian tradition, from ancient pre-Islamic times to the great garden achievements between the sixteenth and eighteenth century in Persia and in the Mughal gardens in India.

The art and craft of carpet weaving (and of garden-making) is more than two thousand years old in the Persian region. The idea of the garden carpet, with its accurate but graphically stylised depiction of the familiar chahar-bagh establishes an interesting connection between the essentially outdoor practice of horticulture and the craft of indoor furnishing, a relationship which is probably unique amongst the major gardening traditions of the world. Poetry about both gardens and carpets speaks of them in the same idiom, imagining the carpet as a garden and vice versa; it suggests a conceptual interweaving of interior and exterior, quite different from, and beyond the usual theory about interactions between indoor space and outdoor landscape, confined

as that may be to mundanely literal considerations of physical and visual proximity.

The most famous and perhaps also the earliest documented garden carpet is known as the Baharestan or Spring Carpet, commissioned by the Sassanian Shahanshah Khusrow (531-579 AD) for the main audience hall of the Palace at Ctesiphon (in what is now Iraq). It was 140 meter long and 27 meter wide. It is described in Arab writings of the period (c. 637 AD) — the design of the carpet was the plan of a royal pleasure garden or paradise. It represented beds of spring flowers and blossoming trees divided by paths and water flowing in channels. There was a broad border all around, and here again were beds of bright coloured flowers. The yellow ground in this wonderful piece was of gold thread. The leaves of trees and flowers were of silk. Fruits were inlaid with polished stones, the water channels were crystals, the blossoms precious stones...<sup>1</sup>





**Garden Carpet, Iran c. 1800. Metropolitan Museum of Art**

*... 'a wide central stream of water intersected by narrower courses, all of them enlivened by fish that, like the water, are highly stylized. The composition as a whole is of two chahar baghs. At both ends, the center of each unit is at the crossing of two water courses, marked by a tree-studded island. From it large trees jut out diagonally into the neighbouring squares. Beyond these are four more formal units representing an ornamental pool or flowerbeds. Along the wide central water course is a flowery path and smaller ones border the narrow courses...'*

Quoted from and photo : [www.metmuseum.org](http://www.metmuseum.org)

## Poetry of Refuge

The poem 'Ode to a Garden Carpet' by an unknown Sufi poet (c. 1500) quoted by Nader Ardalan and Laleh Bakhtiar<sup>2</sup> outlines specifically the aesthetic which guides both garden and carpet:

*Here in this carpet lives an ever lovely spring,  
Unscorched by summer's ardent flame,  
Safe too from autumn's boisterous gales,  
Is gaily blooming still,*

*The handsome wide border is the garden wall  
Protecting, preserving the Park within  
For refuge and renewal: a magic space  
For concourse, music and rejoicing,  
For contemplation's lonely spell—  
Conversations grave or lover's shy disclosure, ...*





Ephemeral, fragile, susceptible to the slightest adversity of weather, the garden changes, dies even, but the carpet is always there, a stable base, offering the comfort of predictability, a permanent garden. When the living gardens have gone, their memory remains, safely documented in the myriad knots of these magic carpets, available to posterity, for inspiration certainly, and perhaps also for replication. As the poet says, in a later verse:

*From all these perils here at last set free,  
In the Garden all find security, ...*

And in another recognition of the Persian garden as a symbol of refuge, Vita Sackville-West<sup>3</sup> describing the meaning of these gardens in the lands of their origin: 'for days, even weeks, you must ride with no shade, and the sun overhead, and nothing but the bleached bones of dead animals strewing the track. Then, when you come to trees and running water, you will call it a garden. It will not be flowers and their garishness that your eyes crave for, but a green cavern full of shadows and pools...'

## Genesis and Form

Quranic<sup>4</sup> quotations are usually presented as the inspiration behind the form and content of these gardens, often attributing a guide book or manual-like specificity to the descriptions cited, and in that sense making a case for what is now conventionally accepted as the 'islamic' garden – supposedly a designed landscape derived from divine injunctions.

But is that really what a Persian or Mughal garden is? The Persian garden tradition precedes the advent of Islam, and the descriptions of paradise are general enough to permit the conjecture that their language purposely suggests an idiom, even physical examples, which might have been already familiar to the natives of the region. This, for them to better visualise the beauties of the heaven which awaits them. Could it not be, that an already extant form or practice developed and evolved whilst acquiring religious sanction and encouragement.

In Sufi symbolism<sup>5</sup> the Garden denotes Paradise, and God's creative power, beauty, and significantly, life itself. Imaginary or real, Heaven is the final refuge. On a sublime plane, the creators of these gardens were engaged in a quest for the representation of a version of paradise on earth. Simple enough in the harshness of arid wildernesses where a walled retreat with water runnels and fruit trees would readily provide heavenly relief; but in the salubrious paradise of the Kashmir valley, a paradise garden in paradise?

'...(in) Kashmir the remarkable achievement of the Mughals was that... they responded to the new conditions. Less imaginative men might have continued to build closely walled gardens on exactly the same pattern as their ancestors....the garden walls modified from the complete barrier of the Persian originals to allow landscape and garden to drift into each other.'<sup>6</sup>

In fact, a very deliberate connection is made, down the hill-side from the moun-





*"...the formal garden spreads like an enormous carpet, seeming to unroll gently down the hill-side, taking with it the rippling, cascading waters..."*  
A view of the Baghe Babur at Kabul, restored recently by the Aga Khan Trust for Culture.

Photo: <http://www.germany.info>  
© Thomas Koehler | [photothek.net](http://photothek.net)

tain to the lake, an axis of flowing water and cascades to which all other arrangements of space and tree masses (the massive *chenars*) are secondary. Each garden celebrates the beauty of its larger setting.

## Garden Prospects

Broadly speaking, courtyards, gardens, and garden prospects formed the main typology of built open space in these times. The term 'garden prospect' may sound unfamiliar, but this is what the gardens at the edges of the valley at Pinjore and Kashmir reveal themselves to be — gardens of course, but most significantly, as places from which vistas to the regional landscape are framed.

The courtyard draws attention to the walls and verandahs which enclose it. The walled garden directs attention away from its walls, displaying its attractions: intricately arranged water runnels and pools, fountains, flourishing fruit and flowering plants. The garden prospect,

or Mughal pleasure garden, linearly rectangular rather than square in plan, includes these features to a superlative degree, but in a fascinating paradox, through the particular assembly of its lines and spaces, suggests that we actually look away and beyond, to a very special view of the world.

And if we extend our field into the mystical realm of Sufi garden symbolism, the idea of 'prospect' is directed inwards: whilst nature and the terrestrial garden represent God's mercy (*asar-i rahmat*) and are worthy of contemplation, the 'real garden' lies elsewhere — in the human heart, or the inner self. The garden is a 'narrative trigger' for this conceptual symmetry — between looking outside over the beauty of the world and contemplative examination of the self.<sup>7</sup>

## A Journey

Would it be over-imaginative to interpret a short journey through one of these gardens, say Nishat or Shalimar, as analo-

gous to life? Not if you agree that every garden has a story to tell. This story takes us from one world (*the* world?) to another, then reveals our world (our life?) in a new and surprising way. There are three steps in the narrative: First, the entry through a gate from the road outside to the lowermost terrace — from everyday bustle, noise and chaos to immediate quietude. Then the progress, along a lively stream up a series of generous terraces, each presenting contrasts of deeply shaded groves and sunlit meadows and visual delights, splashed with drifts of colour from seasonal flowers, and all the time the all-pervading music of flowing water, the breeze, and birdsong. It is paradise, and it is also a vision of life.

Third, is the arrival at the highest terrace, the hill towering above. Turning around and looking back, a visual traverse of the glittering stream rushing towards the lake registers not the detail of the garden, marvellous as it is, but directs vision to another, more spectacular view, in the void framed by garden, water and sky, the other paradise (of the valley) beyond.



In sum, one proceeds *from* the world to the world of the garden, at once symbolic of paradise and also of life. It is easily understood, because its forms are stylised idealisations of the rural landscape — fields, orchards and irrigation channels, and at the point when it is expected that the experience is complete, looking back over the ground covered reveals the real purpose of the design — to take the visitor beyond the confines of this man-made paradise, liberating him, in spirit at least, to a manifestation of Divine creativity represented by the natural landscape of the Kashmir valley. The garden is like a prayer carpet aligned to the qibla, but the object of homage is nature itself.

*The Beloved's face at last we see,  
And there attain our journey's end,  
Our life's reward and final Destiny —  
Refuge and fulfilment in His Infinity.*

*Ode to a Garden Carpet  
(Concluding lines)*

## Lessons

What do we learn from these master-works of landscape design?

A garden is a place to look at, and also a place to look out from, in the best tradition of defensible space, offering prospect as well as refuge. A prospect to know where you are in the schemes of the world, and a refuge to retreat in safety and shelter when the environment is hostile, exactly in the manner that early man learned to sustain himself in a barbaric world.<sup>8</sup> Perhaps we don't look carefully enough at absence: do not these great gardens suggest that there is an aesthetics of emptiness?<sup>9</sup> As an element of design the void is valuable, it enables the extension of vision, like a vacuum it can draw aesthetic energy from surrounding landscape. And above all, ultimately there is only the sky, the earth, and the view beyond. All the rest, as Sufi symbolism would have it, is foam.

*Our garden is filled with nightingales  
The crows have flown away  
Now we can see the flowers of your garden*

*Like a lily we come out of ourselves  
Like a babbling brook  
we dance from one paradise to the next*

*Jalaluddin Rumi  
In RUMI : In the Arms of the Beloved,  
Translations by Jonathan Star*

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Landscape architect and academician **M. Shaheer** can be contacted at [mshaheer27@gmail.com](mailto:mshaheer27@gmail.com)



Anjali Jain



# LOCATING LEISURE

The first principle of all  
(good) action is leisure

Aristotle, circa 320 B.C.

However, what Aristotle means by leisure and what we understand by the word 'leisure' today has two vastly different meanings. The word leisure and its current modern meaning appear to have emerged in the latter part of the nineteenth century, well into the industrial revolution. The tempo of working hours and the state of living conditions had reached a point where trade unions fought for eventually; an eight hour, five day working week. Suddenly, a huge section of society – in the Western world – had an officially sanctioned leisure time.

Concepts of the garden city emerged contemporaneously, with rings of open spaces, parks and boulevards; so that people could live in more humane sur-

roundings. ('To-morrow: a Peaceful Path to Real Reform', later 'Garden cities of tomorrow' was published in 1898). Central Park was commissioned in 1857, and "of great importance as the first real Park made in this century—a democratic development of the highest significance..." in Frederick Law Olmsted's own words.

Activities and places that were till now, the privilege of the small aristocratic section of society, were being opened up to the larger working population of cities. Indeed, public parks were seen as being essential to improving the health of the people, so much so that Central Park had a dairy on its premises! Leisure time produced leisure spaces commensurate to its time and context.



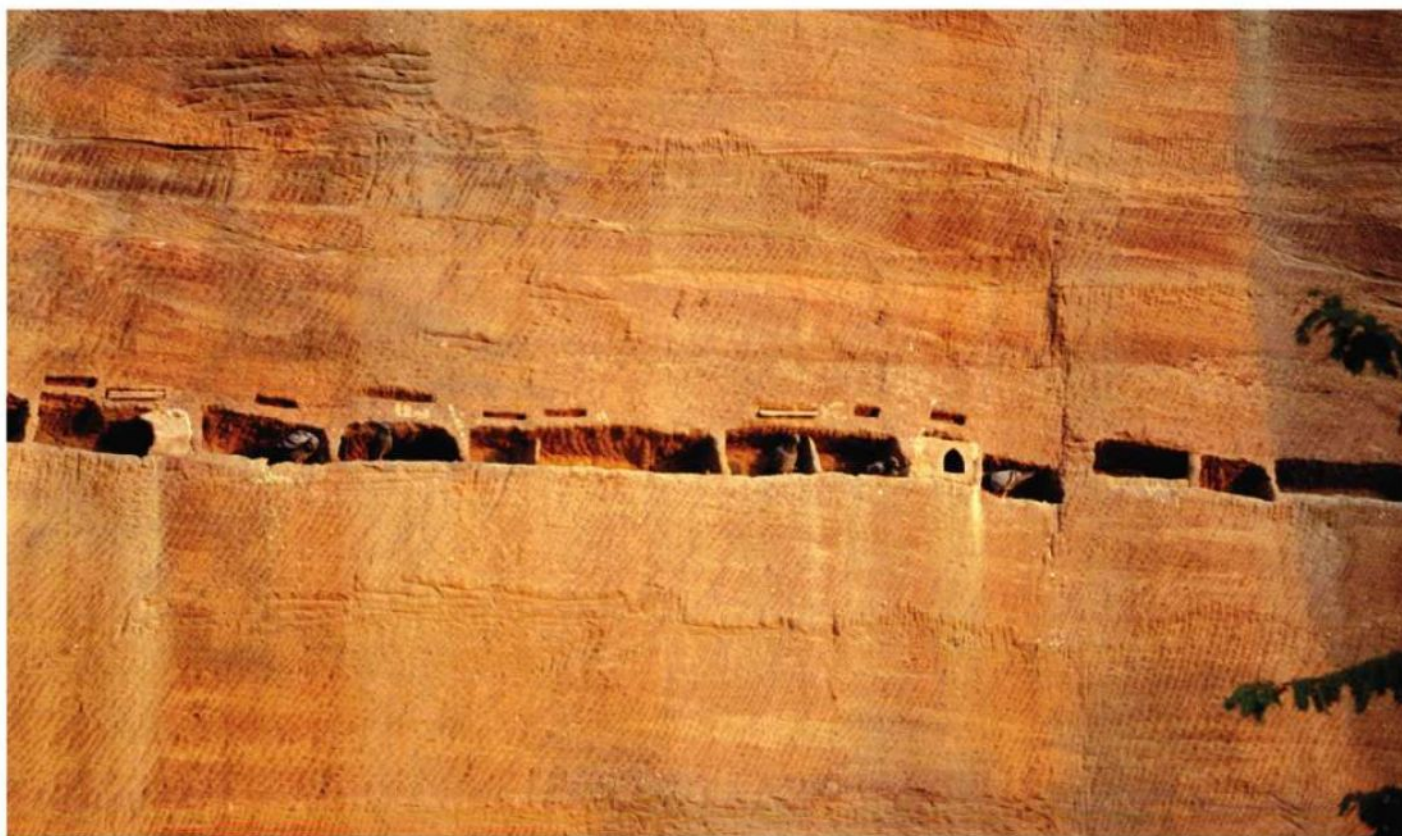
Our basic concept of leisure today is an 'evolved' version of this Victorian notion of recreation to 'renew the body and restore the spirit'. Further research into the word 'leisure' will give us some more precise definitions – of 'active' and 'passive' leisure. 'Active' leisure involving physical or mental participation, and 'passive' leisure which means really doing nothing! In the urban context, planning weekends takes on as much energy as the rest of the working week. The phenomenon has reached a point where it has become an image that a lot of people try and live up to. This has also generated an entire geography of spaces that cater to the demands of 'leisure' – parks and theme parks, journeys outwards – Bangkok, Singapore and similar locations; and journeys inwards – meditation and yoga! Each destination trying to

outdo the rest in offering the best, fastest and guaranteed way of relieving you of your stress! Each one of them unique and 'new'!

Leisure has become a distinct entity rather than being one of the threads in the fabric of everyday places. Indeed, for a moment; if we stop and look more simply; we realize that 'leisure' to most of us, means a change in pace and place in *everyday* life.

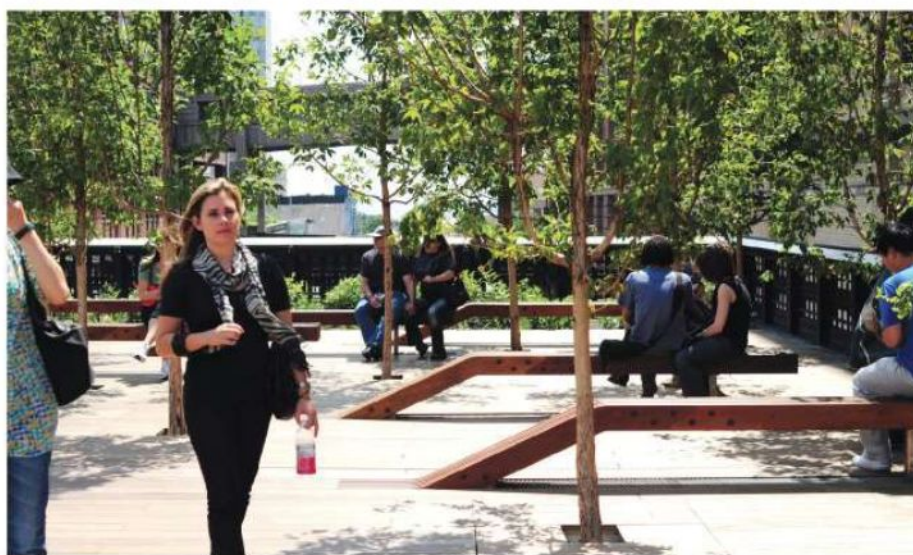
To probe a little deeper, let us examine an example closer to home; literally the home! In a traditional house, the courtyard, the terrace, and in favorable climates, the garden, were all in a way places of leisure, apart from fulfilling their functional purposes. It is important to note that these spaces were not re-

stricted to any particular section of society. Significantly, similar spaces were present at all scales – the street itself, the 'chowk', and of course, *ghats* and stepped wells. These are all places that celebrated rituals of daily activities. Much has been written about all these places as structures and places of social and cultural significance. However, all these places, were also celebrated moments in daily existence and set up a rhythm that made life that much more enjoyable and joyful. To take the argument further, one can claim that these points of leisure have split away from places that we traverse and use every day. Instead, we have places that are used only for 'leisure'. Everyday celebratory spaces as formalized entities are shrinking, while leisure destinations are increasing.





One of the most publicized parks of recent times has been the High Line in New York. The High Line has been a much followed competition and design by the design fraternity at large. The design and designer have stolen the lime-light from the very interesting process that set up both the competition and the park! The High Line is an overhead railway line originally built in the 1930's to carry freight. Interstate trucking put the railway line out of use by the 1950's. Part of it was demolished in the 1960's, the rest over a period of time was taken over by 'grasses, trees and wildflowers'. However, it remained a right of way for the locality and in 1999 'Friends of the High Line'; a nonprofit group of neighborhood residents was founded to save it from demolition and a competition floated to convert it to a 'unique open space'. What is significant here is the process – a space traversed every day, that had its own unique qualities; eventually, transformed into a place that is now accessible to many more and, of course, to its original users. It is not somewhere one goes to specially (of course, given its 'celebrity' status, it attracts people from far and wide!), it is there within the daily rituals of going to and from work and home for the residents of the area. One can debate on what its 'afterlife' will be.



**FACING PAGE | 'Locating leisure' – niches for the birds – a minimal intervention. A desire to include an aspect other than the everyday and the mundane... Miniature incisions can transform the commonplace into places of joy. This is the cliff on which the Mehrangarh Fort, Jodhpur perches.**

**THIS PAGE | One of the most publicized parks of recent times, the High Line is a 1.45-mile (2.33 km) New York City park built on a section of the former elevated freight railroad of the West Side Line, along the lower west side of Manhattan.**

'leisure' to most of us, means a change in pace and place in *everyday* life



*Columbus Circle, named for Christopher Columbus, is a major landmark and point of attraction in the New York City borough of Manhattan.*



As Landscape architects, we are trained to analyze, layers of natural phenomena, and then eventually, synthesize these to produce a place specific design. In the context of our country, the interface between nature and society have always been given due significance. Changing environments and frameworks should encourage a search for innovative points of interaction between place, people and nature.

It is identifying and using opportunities such as these that will enable us to generate a contemporary set of typologies for turning moments of everyday urban life into occasions. Leisure places like all other places depend on their use by people; and the closer they are to every-

day life, the more authentic and successful they will be. These will also be far more authentic leisure spaces within the city. The most successful park is the one that is well located rather than the one that is well 'designed'. Every city will have its own quirky, interesting, informal places where people gather, relax and generally potter around. All of them don't have to be formalized, but some of them can definitely be.

Columbus circle in New York, is a traffic island, but situated such that hundreds of people traverse it daily. Refurbishing the circle, which provides as much sitting space as it can, it has become one of the most popular places for nearby people to have lunch, notwithstanding

the traffic that has to be crossed to get into the circle!

Anchoring these public places, to the larger natural world will also in turn make them richer in experience. Dan Kiley's 'Fountain Place', in Dallas, does just this. Part of a mixed use development, the urban plaza designed by Kiley gives the place its life and identity. The trees as everyone knows are native to Texas. The water in a way is also native, in that the place was originally a swamp.

Finding some of these places in our immediate neighbourhood will definitely make for more humane and joyful spaces and cities.

| All images by **Chen-Yin**, except for Mehrangarh Fort on page 28, which is by the author.

**Anjali Jain** is Masters in Landscape Architecture from University of Pennsylvania. She is presently working as Landscape Architect with M/s Prabhakar B. Bhagwat, Ahmedabad. She can be contacted at [anjali.gap@gmail.com](mailto:anjali.gap@gmail.com)



Ketaki Godbole

# REJUVENATE NATURE

OSHO TEERTH PARK, PUNE

‘...To laugh like a brook  
as it trips and falls,  
Over stones on its way,  
to sing through the light,  
Like a lark  
who is learning to prey...  
I go to the hills,  
when my heart is lonely,  
I know I will hear,  
what I’ve heard before...  
My heart will be blessed,  
with the sound of music,  
And I’ll sing, once more...’



I was reminded of these beautiful lines from the musical ‘The Sound of Music’ when I visited a place in the heart of Pune... A silent yet melodious place, which brought alive memories of this evergreen film, and lifted my spirit into the realm of calmness and serenity. An atmosphere that invigorated the mind, and enthused the physical being. A perfect start to the day...

I was overwhelmed by the effect of these perfectly ‘natural’ surroundings. Even more awe-inspiring was Nature’s tremendous ability to reinvent itself, and assimilate all forms of life so unassumingly and harmoniously. This landscaped garden lies within the precinct of the Osho Commune in Koregaon Park, a prime residential locality in Pune. It is an excellent example of the Earth’s ability to transform itself so radically, to the point of seeming almost surreal.



# to laugh like a brook as it trips and falls...

Osho Teerth Park is what stands in place of one of the decrepit *nullahs* that serve as wastelands in the locality today, and is also commonly known as the Nullah Park. It is set in the lush environs between two lanes of Koregaon Park. It symbolises a reminder of hope, and a will to start afresh, with renewed vigour, no matter at what point of time the transformation begins...

The Osho Teerth Park was conceived by Osho Rajneesh in the year 1989. "The idea behind the Osho Teerth was not to have a dull symmetrical garden but a park with a Zen-inspired landscape and full of surprises," says Swami Vedant Bharati, one of the key persons involved in the creation of this park. In the year 1990, the Shunyo Foundation was established to realize this vision. Over a period of twenty years, the park has become a favorite among people of the surrounding community. It has been transformed into a beautiful and complete ecosystem, with the *nullah*-stream meandering through the landscape.

The park is divided into two sections inter-connected by a bridge. On entering the garden, a sense of quietude prevails with only the gentle sound of the stream to keep you company. The gravel-paved garden path leads you on to a finely chiseled statue of Osho, the inspiration be-

hind the project, with the words Osho Teerth written alongside. An undulating greenscape dotted with a variety of plants on both sides unfolds before your eyes. Lanes lead from under the thick canopy of trees to other lanes hidden by the foliage and the green vista seems almost unending. The ambience of the garden is essentially Japanese, and it has been allowed to grow in a subtly controlled but visibly wild form, adding a timeless quality to the landscape. An air of inviting tranquility envelopes the park spread over 12 acres of greenery. A gently gurgling stream flows throughout the length of the park and is accompanied by winding pathways and intermittent spaces that are discrete and canopied by tall bamboos or large trees. Spaces are designed to be conducive to meditation or just absorbing the artistic focal points that are created by framing beautiful views of nature.

Careful planting of indigenous trees along the periphery screens the presence of existing residential buildings along the east and west periphery of the park. The sculptural forms inherent in the plant species have been cleverly used to create a visual symphony. The play of shade and light is an important part of the design as are the large boulders outlining the stream or the seating corners. One can cross the stream using the boulders as

stepping stones or the strategically placed Japanese style stone bridges, framed by golden bamboos at both ends.

The boundary walls of the park, as well as the built form of the meditation centre and spa located within the commune are dressed in black natural stone. They are designed in such a manner so as to be unobtrusive as a background for the mixed palette of the green colour that pre-dominates the precinct.

## The Process

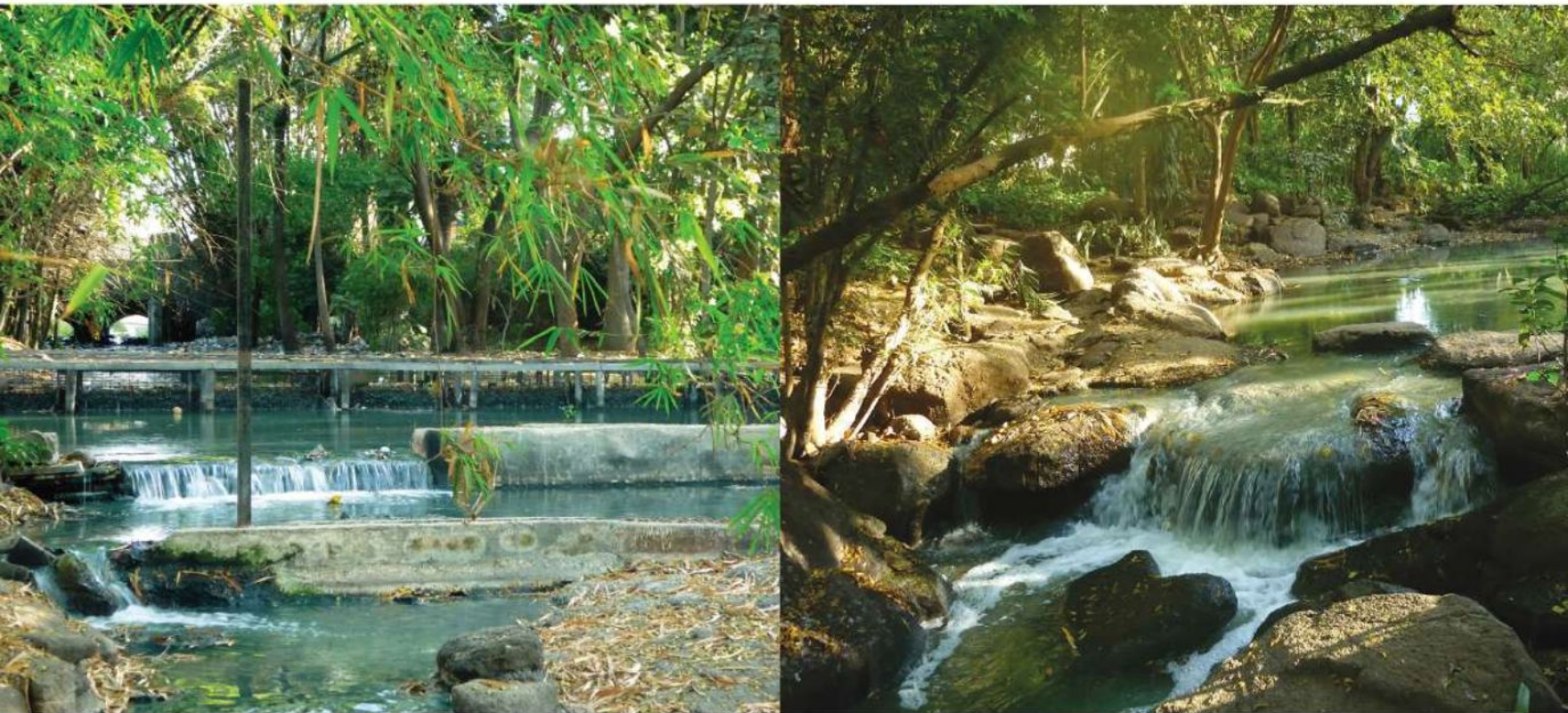
In May 1990, the Shunyo Foundation was initiated to develop this area in co-operation with the Pune Municipal Corporation and Maharashtra State Government. The Foundation sought permission to acquire the land around the *nullah* for a public park. The work of turning a narrow strip of wasteland, 850m long and 75m wide, into a verdant setting was a challenging project designed by horticulturist Swami Nihar and undertaken in phases. Water management became the key to this ecological experiment. Ingenious irrigation techniques from around the world were thought of to avoid the use of chemicals. The work included bringing in 7000 truckloads of building-excavation soil, huge rocks for landscaping, connecting village drains to sewer lines and constructing retaining walls to prevent flooding of the slum.



*An almost unending greenscape dotted with a variety of plants all around unfolds before the eyes... One realises Nature's tremendous ability to assimilate all forms of life harmoniously, with the subtly controlled, but visibly wild growth of the landscape adding a sense of timelessness to the place.*







**THIS PAGE** | *The process of filtration of water begins with an iron mesh that separates the floating garbage from the nullah. Next, the water is made to cascade into a pond, and the difference of levels allows for the process to take place easily.*

*The truly unrecognisable transformation from a nullah to a beautiful clear water stream... Water cascades at various points induces oxygen into the current, and eliminates odour. The water is now visibly cleaner, and continues to be freed of suspended particles. The tranquility of the park is literally mirrored in the stream water.*

**FACING PAGE** | *A meditation space in the midst of an almost forest-like environment ... the ashram is a prime attraction for tourists who are enthused with the preaching and ideologies.*

## The Design

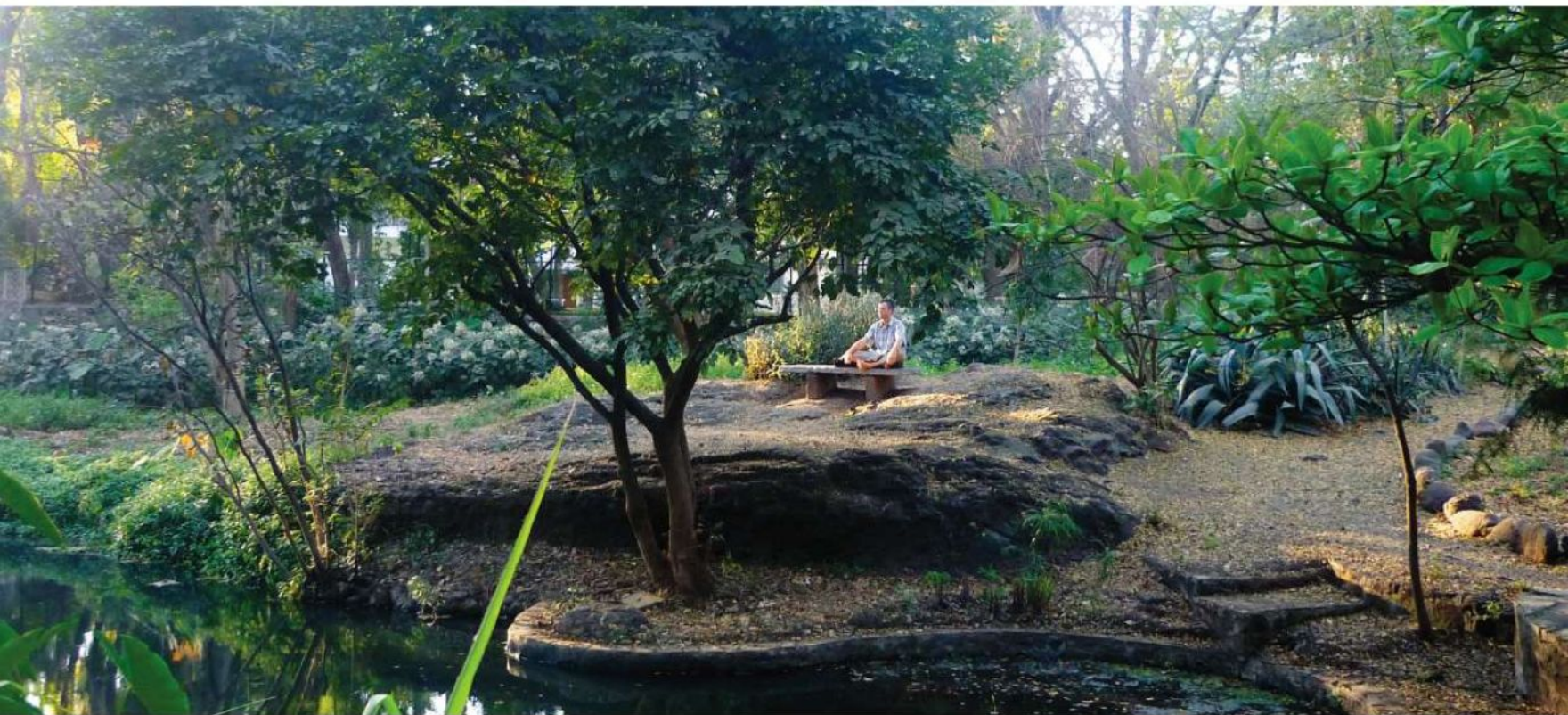
The Osho Park, is located downstream of a slum of 5000 people. It has been designed to handle a normal flow of 21,000–24,000 gallons per hour, as well as peak monsoon flows of 100 times that volume without damage to the biological community of flora and fauna that naturally feed on stream pollutants along the length of the park.

The filtration system used to cleanse the nullah is a unique one. It is a natural root zone filtration system, which activates by means of plants such as water-hyacinths, bulrushes and alocasias. The nullah is first systematically guided through a steel gate at the south end of the park, and the gate is provided with a mesh to separate the floating garbage. It is then guided through a series of four ponds, created on natural bedrock, which

serve as settling tanks and filtration tanks for sludge. The two upstream ponds cascade into each other by maintaining a level difference of 300 mm, thereby encouraging natural aeration and oxygenation of the flowing water. The system also has a backup of wetland zones that run parallel to the third and fourth ponds to hold the extra volume of water, which is inevitable during the monsoons. These zones help the cultivated ponds to retain their unique eco-culture.

These ponds are constructed off-stream in serpentine fashion for optimum use of valuable space and to eliminate stagnant pockets. They are stocked with a wide variety of flora and fauna to feed on the remaining pollutants. Fish known as ‘gambusia’ have been specially bred in the ponds to clean the water of mosquito larvae.





Aeration is accomplished through in-pond fountains and tiny waterfalls with a level drop of just 200-300 mm, sufficient to aerate the flowing water, which rejoins the stream bed odour-free and relatively clear. In addition, these waterfalls function as aesthetic focal points and contribute to the musical quality of the stream. A sand filter at this re-entry point allows use of the stream-water for sprinkler irrigation of the beautifully landscaped banks where every inch of ground is covered with greenery.

The water, which at the source of entry was an unclean stream with oil-waste dumped by a neighbouring railway yard, continues to be cleaned by the natural filter process and is now eighty percent purified after having passed through this course. The proof of success lies in the fact that it is now naturally inhabited by fish, kingfishers, herons and lapwings that have made the park their permanent abode.

## Selective list of plants used in Osho Park

### TREES

*Caryota urens* – Fish tail palm  
*Phoenix dactylifera* – Date palm  
*Livistona chinensis* – Fan palm  
*Chrysalidocarpus lutescens* – Areca palm  
*Polyalthia longifolia* – Ashoka tree  
*Terminalia catappa* – Badam tree  
*Eucalyptus* – Safeda  
*Hibiscus moscheutos*  
*Areca catechu* – Supari tree  
*Bambusa ventricosa* – Bamboo species  
*Dendrocalanus Strictus* – Bamboo species  
*Alstonia scholaris* – Saptaparni  
*Delonix regia* – Gulmohar tree

### SHRUBS

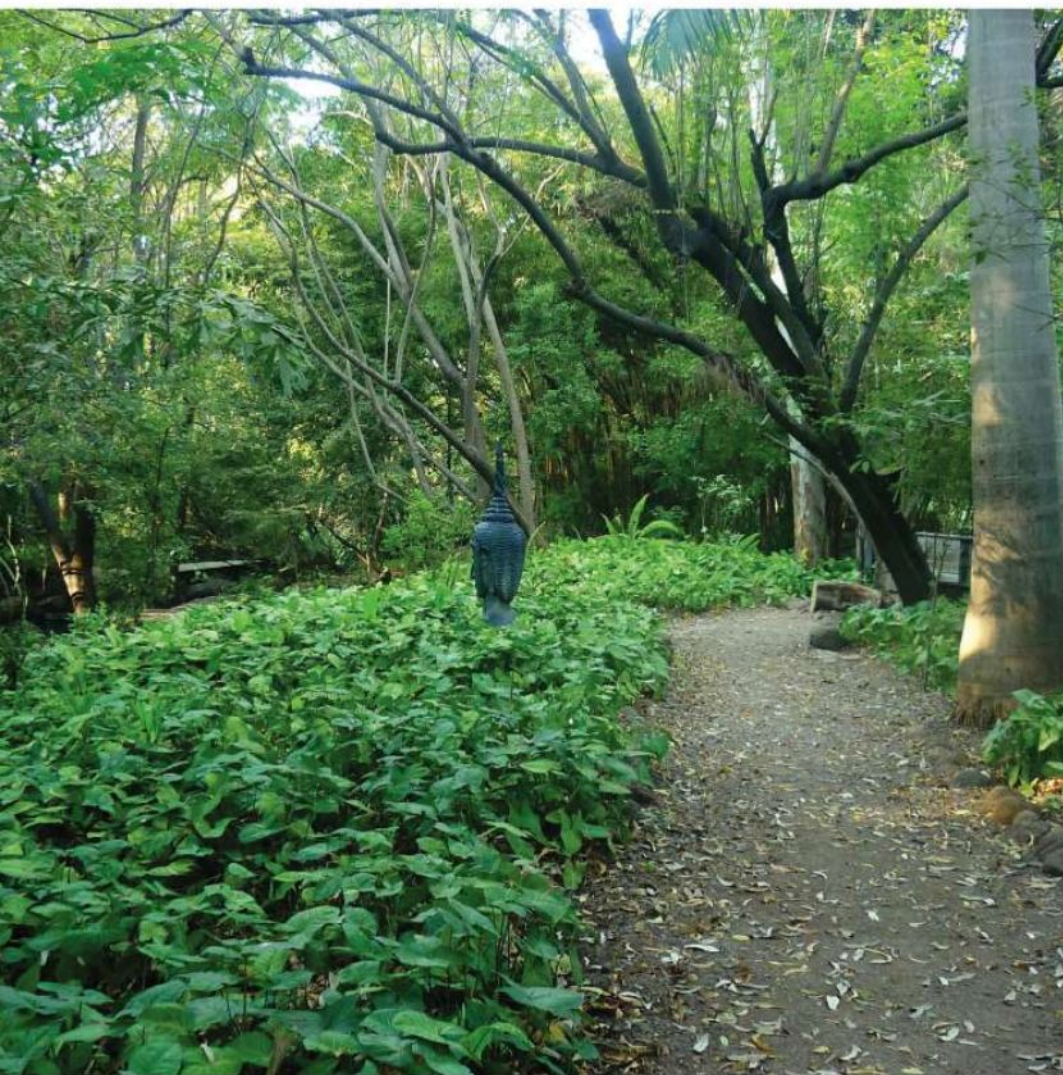
*Thevetia peruviana* – Bitti  
*Bougainvillea*  
*Furcaria*  
*Tabernaemontana coronaria* – Chandni  
*Scindapsus* – Money plant

### GROUND COVERS

*Nephrolepis* – used as ground cover  
*Alocascia* – used as ground cover



my heart will be blessed,  
with the sound of music,  
and I'll sing, once more...'



Sunbirds with their brilliant colours and chattering bulbuls dot the landscape. In fact, one sees nearly 20 species of migratory birds every year.

Nature seems to have established a completely balanced and interactive habitat here. The tremendous recreational value of this exquisite stretch of once-filthy nullah has to be seen to be believed. There is a steady flow of visitors to this park every morning. It is a haven for fitness lovers, and one always sees morning joggers or the evening strollers in the park. The *ashram* is a prime attraction for tourists who are enthused with the preaching and ideologies of Osho Rajneesh. It is a resort for Meditation and Yoga.

Osho Teerth Park's transformation from a 12-acre open-air sewer to a unique environmental project serves as a fine example of a sustainable public project.

*The path to enlightenment – Nature plays its role perfectly, with the path winds along the stream, hidden by groundcovers and mounds*

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| All images courtesy the author

**Ketaki Godbole** is a practicing architect based in Pune. She can be reached at [ketaki\\_arch\\_god@yahoo.com](mailto:ketaki_arch_god@yahoo.com)



Akash Hingorani

# MASTERPLAN OF SOUTH DELHI GREENWAY SUSTAINABLE URBAN LIFE



**ABOVE** | Bio-remediation gardens with different levels of pathway and dedicated cycle track as part of non-motorized eco mobility corridor of the South Delhi Greenway project.

## The context and challenges faced by our cities

Most of our cities can trace back their roots to their rivers – human settlements mostly originated along banks of rivers and lakes. Rivers then, apart from providing water, were an integral part of the city's culture – the engagement of the city with the river in terms of bathing *ghats*, riverfront temples and a host of religious and cultural activities would acknowledge and celebrate the rivers in all such towns. The river would have been the centre of all activity – including transportation by water of essential goods and commodities for the residents.

This early engagement of the city with the river has since been systematically eroded over time, and the economic dependence on the river diminished, as the city found new ways to move goods and people with modern railways and highways.

Earlier, the city would use wells and ground water for drinking and river water was used for irrigation through channels (good rulers were known by the number of irrigation canals they built in their kingdoms for irrigation).



Gradually, however, the availability of cheap, or sometimes free, electricity to our farmers resulted in them using more and more borewells to irrigate the fields. This has led to massive levels of groundwater depletion.

Meanwhile, with the increase in populations in the cities, river water started getting used to meet the growing demand of drinking water in modern urban centres. Barrages were built at entry points of the rivers to tap the water and channelize it into treatment plants to make it potable. This water, on being used, would be turned into sewage. This would then be emptied back into the river. Expensive sewage treatment plants were built to treat the water before it was allowed to flow back into the river – but as evident, this has not been very successful.

The city now uses all the river water at the entry point and discharges untreated sewage as the river exits the city. This has led to our rivers running nearly dry for most of their run through major cities. The lack of minimum flow in the rivers has resulted in the destruction of self-cleansing mechanisms of nature. Thus, pollution in the rivers continues to plague all our cities.

The drains or '*ganda nallahs*' as we know them, are another casualty of the mindless development engulfing our cities. The monsoon stormwater from the highlands flow into these drains and is carried to the river. Highly seasonal, these drains also offer the city a chance to recharge its ground water aquifer through a series of local ponds, lakes and wetlands. These form an important part of the overall ecological processes of any city.

The increased water supply to homes and the resultant increased sewage requires cities to regularly expand their sewage networks to connect to all areas. This has not been achieved and even in the capital city of Delhi, there are places where the sewage network has not yet reached. The sewage discharging from the such parts of the city eventually finds its way into the natural stormwater drains – and hence the name '*ganda nallah*'. The state of these *nallahs* reflects the complete apathy of the city governments and belittles all other technological advancement of the city in other fields – as this basic sanitation requirement overrides all other 'livability' factors.

Apart from water pollution, air pollution is another concern that makes most of our cities unsafe places to live in. Lack of public transport facilities has led to more and more people in the city preferring to own cars and then demanding better roads and more flyovers to ease the vehicular congestion. With the continuous addition of new vehicles on the roads (1000 new vehicles are added in Delhi every day!), most of the air pollution is being caused by vehicular emissions. In this process to increase road space for an ever increasing traffic, most cities are undergoing massive road-development programs – with vehicular flyovers being built at every traffic intersection – all in the hope of decongesting the cities and reducing vehicular emissions caused by traffic jams. But this expansion of the road infrastructure is not going to solve the problem – in fact, it will only spur more people to go and buy that much aspired car model. The increase in vehicular density will lead back to where we started from – cities grid-locked with vehicular congestion spewing out harmful emissions and creating pollution.

The present transport policies, or the lack of them, has led to serious mobility crisis, where all the roads area taken up by vehicles. Poor people have not been included in planning policies and it is becoming more difficult to commute in the city on foot or on cycles for anyone. What is needed is a paradigm shift in how we look at transportation in our cities and refocus and prioritize mass-rapid public transportation, so that people can make the modal shift from private vehicles to more sustainable forms of public transportation.

Under the JNNURM (Jawaharlal Nehru National Urban Renewal Mission) program several Indian cities have started in investing in BRT (Bus Rapid Transport) corridors and Metro systems. This will allow people to commute around the city on the Metro or the new buses – which should become the preferred choice over private cars. This new development also means that all these cities will now need to put in place good quality pedestrian and cycling infrastructure – as all trips on the Metro or the bus will typically begin and end by walking. Delhi, in the run-up to the 2010 Commonwealth Games, has already embarked on a massive Streetscape program that will provide for the 'last mile' pedestrian connections connecting the new Metro Stations and Bus-stops to all busy and important destinations in the city.

## The city & its open space

Most of our cities are blessed with many parks and open spaces – but they need to be more accessible, better connected, better programmed for people to be able to use them and enjoy them. There is no use of having a park as per the density norms, if on site it is just an inaccessible wasteland.



The garden city of Singapore is now trying to become the 'city in the garden' – where every part of the city is being looked at as space that needs to be planned in a sustainable way to make the city more people-friendly. As residential apartments in the city tend to be very small, Singaporeans prefer meeting their friends in the outdoor drawing rooms. The city then tries hard to make the outdoors so pretty so as to make it the common drawing room of the citizens. Leisure in the urban everyday context – would then necessarily mean looking at providing enough 'public spaces' to cater to the different types of urban recreation – places that allow people to be a part of a bigger picture – a participation in the drama of life. Our public spaces should be the stage sets where such a drama is possible and the variation in each space could be the context driven.

This is the underlying theme for the South Delhi Greenway Master Plan – to connect to all the open spaces in the city – parks, plazas, markets, public land – and allow them to be given back to the pedestrian and the cyclist instead of been taken up entirely for the cars. These urban spaces could then start becoming the 'outdoor rooms' and help make the city more 'people-friendly' and less 'car-obsessed'. To get a feel for the place, it becomes obligatory for people to walk – the main areas of the city should therefore be first designed as 'walkable spaces' – and then drivable – if the space permits – a city should not have places that are inaccessible for the pedestrians.

Most successful cities across the world have re-invented themselves in the last two decades by focusing on creating pedestrian friendly environs – so that it is comfortable and more fun to walk around the city rather than just be driven around. Good pedestrian infrastructure would include well designed connections to bus-stops, metro stations etc.

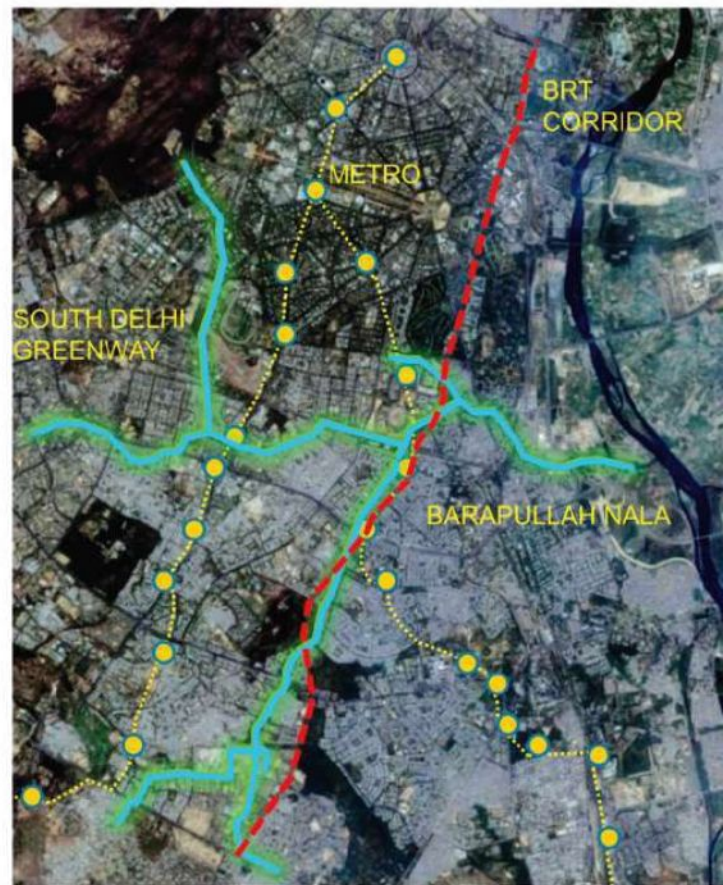
this complete network of alternate mobility will then become the preferred modal choice over private cars – which in turn will help in decongesting our roads and help make more people use public landscapes. 'People-friendly' cities should allow people to move around the city swiftly, safely, comfortably and in a sustainable way. The house is a private domain and the streets are the public domain – places to socialize, enjoy walk, eat and meet friends. That is the place where we all individuals come together to create the 'urban' lifestyle.

### The South Delhi Greenway

Oasis Designs Inc. conceived and designed the South Delhi Greenway project along the 12.5 km long Barapullah *nallah* as a pilot project for demonstrating how a dirty urban drainage corridor could be transformed into a sustainable urban resource – an eco-mobility corridor for non-motorized transportation and provides linkages to various historic, cultural, commercial attractions in the vicinity.

The Greenway Master Plan was formally commissioned in February 2005 by the Municipal Corporation of Delhi, Delhi Development Authority and Delhi Transport & Tourism Development Corporation jointly as the clients, and IDFC (Infrastructure Development Finance Company) as the lead consultants. IIT-Delhi was retained as the technical sub-consultants for the environmental aspects of the project.

*South Delhi – the Greenway Trail. Interface with existing transport systems.*





# creating an eco-corridor to protect natural heritage & wetlands...

The South Delhi Greenway is an urban design intervention that would enable the city to simultaneously mitigate both the air and water pollution challenges and also solve the congestion and urban mobility problem and help improve the overall quality of life in our cities and to significantly improve the social, economic and environmental sustainability of the region.

This project aims at achieving the following objectives:

- Eco-restoration of the dirty *nallahs* and demonstrate a model ecological urban development to manage stormwater, ground water recharge and wastewater treatment and reuse. This will also help reduce the water pollution in our river and also prevent groundwater contamination by untreated sewage entering the aquifer.
- Helping urban mobility – providing for space along the drains for people to walk and cycle to connect to the new mass-transit hubs of the city.
- Create to self sustainable a financial model with help of advertising, theme parks, etc. to make the entire greenway an interesting and viable business. This will also ensure that the entire project becomes a popular destination for the city.

As the entire network of the natural stormwater drains, the lakes, the wetlands form an integral part of the cities eco-system – these should be preserved and protected. The South Delhi Greenway Master Plan has mapped the entire drain channel and its surrounding catchment to create a comprehensive strategy for stormwater management for

the region – which looks at creating decentralized rainwater harvesting opportunities, reviving wetlands, lakes and ponds for local detention of the rainwater for groundwater recharge.

The Greenway Master Plan tries to engage with these natural features of the city to create unique imaginative recreational opportunities. Most of our cities have a very rich heritage – both built and natural and the present-day developments should be able to showcase these and make them accessible for both tourists and local alike – for people to appreciate and learn about our history. Eco-restoration all such historic water-bodies, rivers, tanks, step-wells, rainwater harvesting structures is one of the environmental aims of the South Delhi Greenway project.

The South Delhi Greenway Master Plan studied in great detail the non-point pollution sources contributing untreated sewage into the storm water channel all along the length of the 12.5 km long Barapullah Nallah. All this information on water quality and quantum was then processed and studied by environmental engineering consultants from IIT-Delhi, to develop the right method of treatment of the untreated sewage in order to make the water odorless, colourless and fit for irrigation. The crux of the wastewater treatment strategy was not to involve the use of electro-mechanical equipment to treat the water – as this consumes a lot of



power and cost and at the same time would not work during power outages – unless supplemented further by expensive power back-up mechanisms.

Pune's Osho Ashram has successfully installed a biological wastewater treatment facility, which was studied, and the systems evolved were designed by experts to use biological action to clean the sewage water with help of various stages of screening, detention basins, sandbed filters, and special plants, reed beds and fish to finally achieve good enough quality of water for irrigation. The sludge generated during this process was again proposed to be dried up and used as manure in the extensive 700-acre park. The entire decentralized biological wastewater treatment – which formed the critical backbone of the project – was designed and showcased as a natural wastewater treatment facility – as a part of a larger ecological park near existing wetlands at the historic site of the Satpula.



# ...and improving quality of urban life

## MASTER PLAN SOUTH DELHI GREENWAY

### THE OBJECTIVES

- Clean the dirty drain, help reduce the pollution in the river.
- Create a continuous trail for walking and cycling all along the drain.
- Provide the last mile connectivity to people using the BRT or the Metro to and from their destinations to schools, markets, residential areas etc.
- Improve quality of life in the city by adding 700 acres of recreational space.
- Create a heritage trail to showcase Delhi's heritage and make it more accessible.
- Create an eco-corridor to protect our natural heritage, wetlands and streams.

### THE GREENWAY TRAIL

Pedestrian connectivity and interface with the existing public transportation systems. Pedestrian Trail connections to:

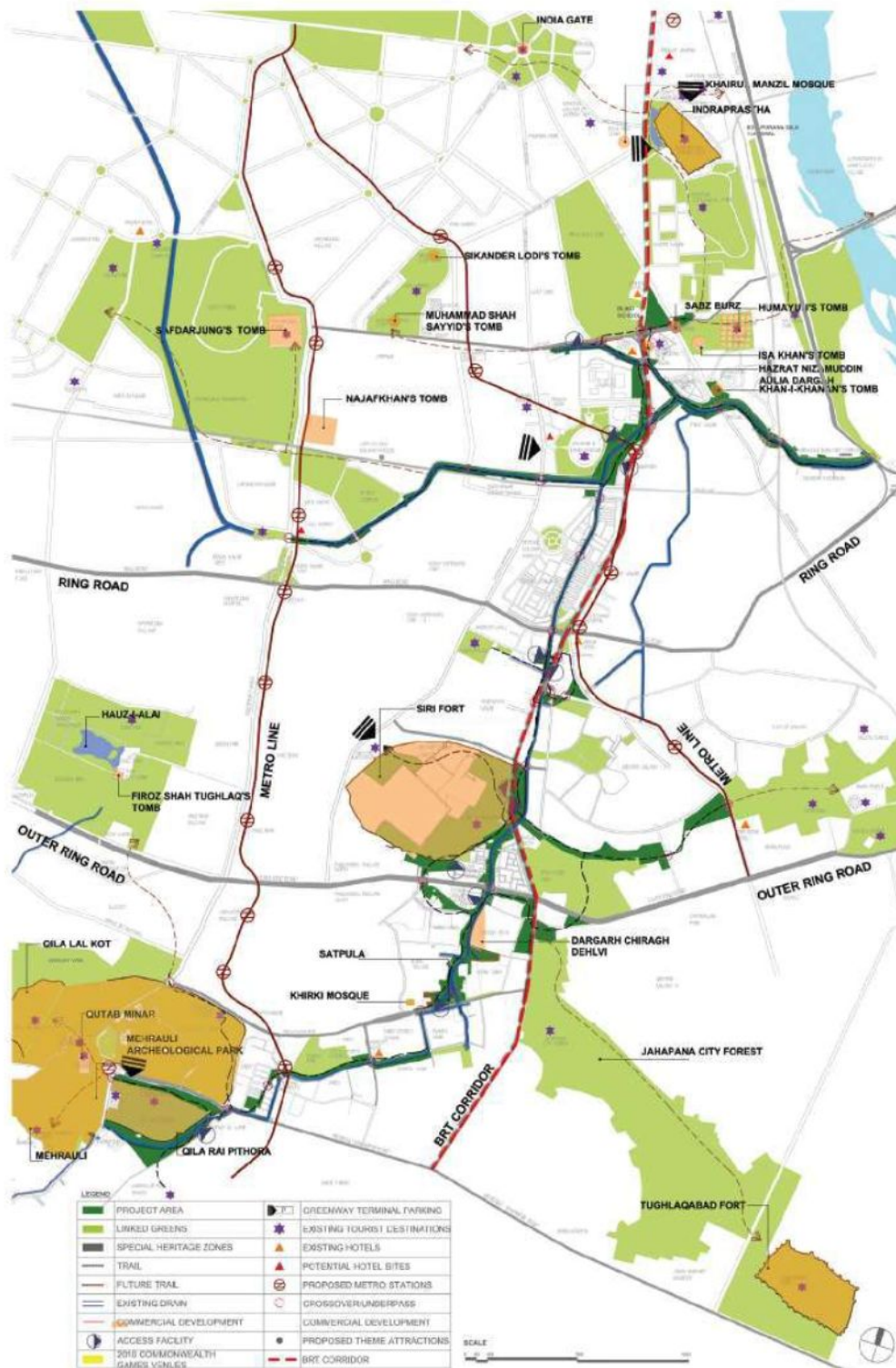
- Metro Stations (Pragati Maidan, AIIMS, Saket Lodhi Colony, J.N. Stadium, Moolchand, Kailash Colony, Nehru Place and Qutab Minar)
- BRT Bus stops (along Joseph Broz Tito Marg)
- Existing Ring Railway
- Nizamuddin Railway Station
- Sarai Kale Khan ISBT

### SHOWCASING DELHI'S RICH HERITAGE

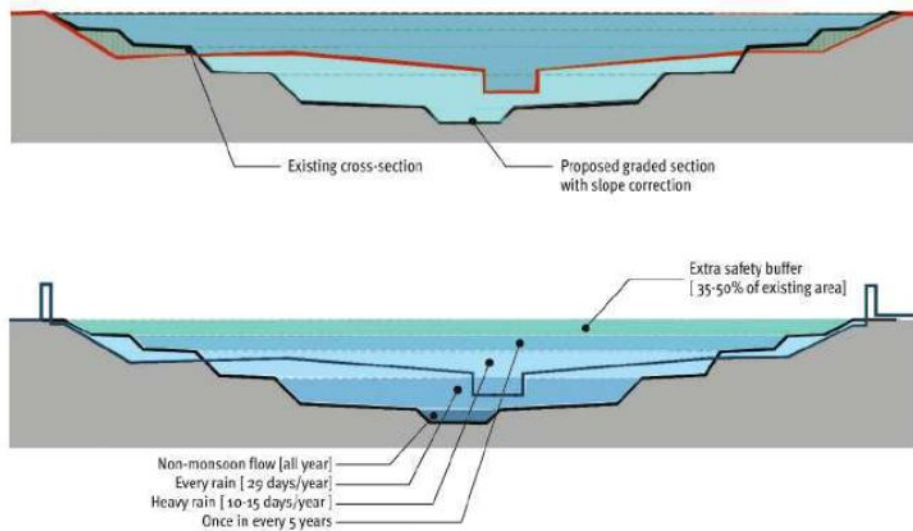
Out of the seven ancient cities of Delhi, the South Delhi Greenway shall connect directly five of them – Qila Rai Pithora, Mehrauli, Siri, Tughlakabad and Firozabad. Important historic sites that will be connected would be Qutab Minar, Satpula, Lodhi Tomb, Safdarjung Tomb and Humayun's Tomb.

### FACING PAGE | BUILT & NATURAL HERITAGE

Satpula – 'Seven Bridges' – a weir about 65m high, is a rainwater harvesting structure with sluice gates meant to provide water built in 1323 AD. Under the Greenway project, a decentralized biological wastewater treatment is designed and showcased as a natural wastewater treatment facility – as a part of a larger ecological park near existing wetlands at the historic site of the Satpula.







The open spaces and parks of the city get connected and offer the city much needed 'natural connections' for people to be able to enjoy nature from within the city. Showcasing modern sustainable urban development is something that the city should actively engage with its natural topography and water features. The Hongkong Wetland Park is one such park that showcasing the importance of wetlands in our cities. The South Delhi Greenway plans to create a continuous uninterrupted trail networks all along the drain – which will give people the choice of moving around the city through this alternative non-motorized transportation corridor and connect through faster shortcuts to schools, markets, and friends in the neighborhood. The choice of not having to depend on the private automobile would make it much easier for people to exercise their fundamental right to freedom of movement in the city – and would also help reduce the number of vehicles on our roads as many small vehicular trips would get converted into walking and cycling trips. Kids could use the Greenway to cycle to schools, ladies to visit the market, the senior citizens to simply meet their friends – the Greenway would likely become the most popular choice for getting around by city residents.

With the Metro and the new BRT corridor, the city is already on the verge of redefining the urban mobility – but as most of the commuters would need to walk a part of their journey on foot – the need for upgrading the pedestrian infrastructure in the city is the immediate requirement. The South Delhi Greenway with all its connections to and from the metro stations and the BRT bus-stops will soon prove to be the most preferred last-mile connection between people wanting to reach their destinations from the metro stations or bus-stops.

This trail system also proposes to become the city's new Eco-mobility Corridor or the Non-motorized transportation corridor for the city – which once completed, could host a whole range of free eco-mobility options like the Velo-taxi in Toronto, or the Velib – cycle rental system in Paris. The 'last-mile connectivity' that this corridor would achieve for people to and from the mass-transit systems of the city will hopefully allow more people to effect their modal shift from their personal vehicles to public transit – reducing the vehicular congestion and pollution on our roads. This would help reduce the emissions of Greenhouse gases and help in the climate change mitigation.



**ABOVE |** Cross-sectional correction of nallah at Defence Colony based on longitudinal section of overall hydrological levels.

**BELOW |** Cross-sectional modification of existing nallah to make it more usable during different seasons and better silt collection.

**FACING PAGE |** The existing [BELOW], and the proposed [ABOVE]. The proposal not only aims to eco-restore the dirty nallahs of the city, but to also provide for open space along the drains for people to walk and cycle to connect to the new mass-transit hubs of the city.







# enjoying the city's outdoor pedestrian space...



The waterfront Promenade at Carter Road, Mumbai is another example where residents use the main waterfront promenade in the evening for a walk to meet friends etc. It is this kind of quality spaces that are required for people to engage in enjoying the city's outdoor pedestrian spaces – to walk, exercise, sit around, meet friends and watch the sunset. Public space as city infrastructure allows people to connect and enjoy the public outdoor realm.

Another interesting initiative in Singapore is the newly constructed 'Park Connector' network that the city has put in place to link up important parks – not through roads but through exclusive pedestrian and cycling trails – that allow people to access these parks and move from one

to another without having to follow the tracks along the main vehicular roads – the park connector network provides short-cuts through the city along the linear corridors of the stormwater drains.

The South Delhi Greenway project aims to create a model of sustainable urban development for other similar *nallahs* in Indian cities to be converted into ecological and beautiful spaces for the people, and for people to be able to enjoy nature from within our dense urban centres, for kids to be able to look at trees, flowers, birds and butterflies. The *nallahs* offer the potential of being converted into beautiful ecological nature corridors, and transforming the 'quality of life' in the city. All our cities need to reclaim this important part of their 'natural heritage'

and create meaningful spaces in the public realm which showcase nature and sustainability – and this needs to be done urgently before these drains are reclaimed by transportation engineers to convert into more road space for the ever increasing car population.

The Cheonggyecheon stream restoration in Seoul is an example of how the city demolished a 6-lane expressway and daylighted the stream below. Today, it is an urban park that has become a world-famous tourist destination. With the right priorities and commitments we can look forward to more enjoyable, connected, all inclusive, people friendly, sustainable urban cities across India.



# ...to walk, exercise, sit around, meet friends and watch the sunset



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'Sewage Canal: How to Clean the Yamuna', Centre for Science and Environment, CSE, 2007

## Team

Oasis Designs Inc.  
Akash Hingorani  
Sujata Hingorani, Divya Gupta, Rajender Singh,  
Sayansikha Tripathy, Ranjana Patwal, Neha Mehta,  
Pushpinder Arora [Image courtesy]

IIT-Delhi | Dr. Nema

IDFC | Alpna Jain, Jyoti Gujral, Cherian Thomas,  
Mohan Kumar, Prem Subramaniam

**FACING PAGE** | 'The drains and waterfront can be landscaped in the form of interconnected parkways. Such trails could be one of the cheapest forms of drainage and recreation.' – MPD, 2021

**THIS PAGE** | The important case studies done for the project included Osho Park, Pune; Hong Kong Wetland Park; Sea-front Promenade, Carter Road, Mumbai; and, Cheonggyecheon stream Restoration, Seoul.

**TOP** | Pune's Osho Teerth Park, also known as Nallah Park – upstream [LEFT] and downstream [RIGHT]. Built in 1991, this 12-acre land was developed from a neglected swampland and degraded wasteland. It is now a beautiful Japanese Zen garden spreading over five hectares of land with meditation and yoga areas set within indigenous flora, greens, rock gardens, waterfalls and a stream. [Also see the article 'REJUVE-NATURE', pages 31–36 of this issue].

**BELOW** | Hong Kong Wetland Park is a 60-hectare Wetland Reserve with conservation, education and tourism facility, located at the northern part of Tin Shui Wai, in Yuen Long. It is an ecological mitigation area (EMA) for the wetlands lost due to new developments. HKWP features typical Hong Kong wetlands as the Park lies adjacent to the Mai Po Inner Deep Bay Ramsar Site which supports over 120,000 migratory birds for wintering or refuelling during their migration through Hong Kong each year. [Source: www.wetlandpark.com]

[All images / renderings courtesy the author]

Akash Hingorani is the Principal Architect with Delhi-based OASIS DESIGNS INC. – an architectural and landscape design firm that is engaged in sustainable design practices in the local urban context. He can be reached at [design.oasis@gmail.com](mailto:design.oasis@gmail.com)  
Website: [www.southdelhigreenway.org](http://www.southdelhigreenway.org)



Dr Shikha Jain

# ROOPNIWAS & RAJNIWAS GARDEN

JAIPUR, RAJASTHAN



**L**ocated in the picturesque valley of Purana Ghat (otherwise known as Ghat ki Guni) near the city of Jaipur, the Roopniwas and Rajniwas Palace and Garden is a remarkable example of Rajput planning. It dates back to the early nineteenth century and historical sources reflect that it was created for Roopa Badaran, who was an aide and confidante to the Rajput queen mother around 1825-35.

A few years after its creation, Roopa Badaran faced house arrest by the British in this palace and garden complex from 1836-1844. She moved to Pushkar in 1844 and stayed there till her death in 1849. Meanwhile, the garden came under the state patronage and was used by the sixteen year old Maharaj Ram Singh II in 1849. His anecdote on a day of *Hariyali Amawas* at Rajniwas Garden is quoted in *The Journal of Asian Studies*,

Vol. 34, No. 3, May, 1975. The historic fabric and garden show distinct additions/alterations that can be attributed to Maharaj Ram Singh II. The garden may have gone through renovations around 1870 when Lord Mayo was welcomed to Jaipur, passing through the Ghat ki Guni stretch. The later period changes such as closing of water channels and enclosures in the Roopniwas Palace indicate such transformations.

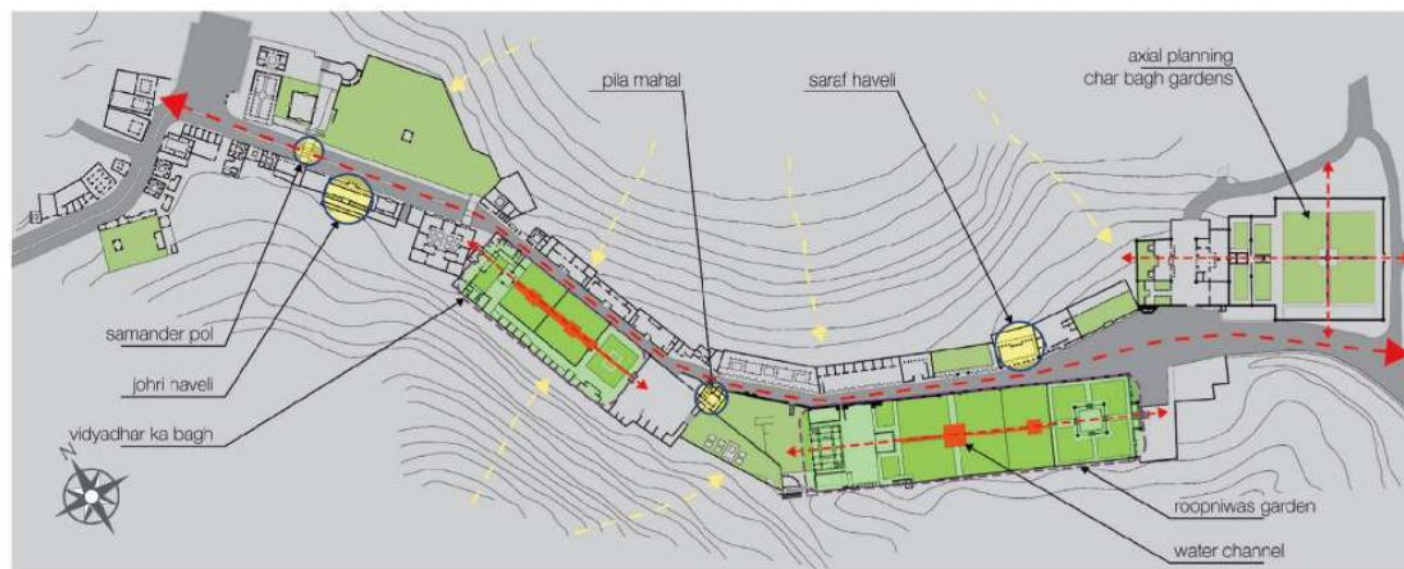


These pleasure gardens of the Rajput royals have long found mention in contemporaneous travelogues. In 1890, William Cain in his 'Picturesque India: A handbook for European travellers' wrote of the Ghat ki Guni area in Jaipur: "The road through the pass is most picturesque, being lined on either side by a continuous string of temples, gardens and country houses, belonging some to the Darbar and others to nobles and trade guilds of the City. The place is a great resort for pleasure parties from Jaipur. The large Durbar Garden, called Rajniwas, near the farther end of the pass is the place best kept up and the best worth seeing. One of the gates of this garden is called the Machli Darwaza

counts his visit to the Roopniwas and Rajniwas Gardens on the 26th January 1903. "The Roopniwas Gardens are located about 2 kos (4 miles) from the city in a valley. On both sides there are gardens and temples, built by the wealthy and by the State. Although many are in disrepair, these still look beautiful. People stroll here during the rainy season. In the middle is a garden built by Jai Singh's mother, called Roopniwas. Adjacent to it are two other gardens called Rajniwas and Vidyadhar's. These gardens are ordinary but they are large and built in the old style."<sup>1</sup>

The Ghat continued to feature amongst the places of interest in Jaipur in later

*Roopniwas with stone, flanked by temples, palaces, and gardens."*<sup>3</sup> He goes on to talk about the Archaeological Museum which "is housed in a building within a garden known as Vidyadhar ka Bagh. Beyond this the Machhi Durwaza, so called because of the paintings of fish on it, commences the Roopniwas consisting of a palace, tanks and terraced gardens which was a great pleasure resort of Maharaja Ram Singh II and who was largely responsible for building it. It is now known as Rajniwas. Formerly, there flowed on either side of the pass, water in the drains, which was carried by means of aqueducts to distant gardens even outside the pass."<sup>4</sup>



(fish-gate). It leads to some old temples with fresco paintings on the wall, which may be found of interest."

Although these had fallen into disrepair by the early 20th century, the gardens continued to attract visitors, European and Indian alike. One such work, authored by Ramshankar Sharma, a Banaras Brahmin who visited Jaipur and published an account of his journey, re-

years as well as is evident by its mention in the 1935 Jaipur Album.<sup>2</sup> "The State Garden called the Roopniwas is very nicely kept and there is a beautiful tank overflowing with spring water in it, and there is also a commodious and beautiful palace in it, a typical specimen of a Rajput nobles' residence."

A few years later, BL Dhama wrote, "The pass along its length is paved upto

FACING PAGE | An early 20th century view of Rajniwas Garden showing lowest level with the stepped well.

THIS PAGE | Ghat Ki Ghuni Base Plan – Typology

#### Footnotes

- 1 Tillotson (2006: 180)
- 2 Jain (1935)
- 3 Dhama (1948: 57)
- 4 Dhama (1948: 59)



The continuing allure of these gardens to the visitors to the city is attested to by their mention in a 1976 publication of the Department of History and Indian Culture, University of Rajasthan.

*"...Situated on an eminence are Vidyadhar ka Bagh and Roopniwas Garden which contain palaces, tanks and terraced gardens. These palaces are said to have been pleasure resorts for the rulers of Jaipur."*

Further to this, several old government letters dated between 1942–46 housed in the Bikaner Archives record the inappropriate usage of the Roopniwas Gardens as an archaeological museum which was finally shifted post independence. The garden since then was neglected while the palatial building was misused till 2006 as a women's detention centre with later intervention of RCC structures.

The Amber Development and Management Authority, Government of Rajasthan finally took the initiative of shifting the detention centre and restoring the gardens and palace structure in 2007, recognizing its potential to be con-

served and developed as an exemplar of the architectural heritage of the Ghat ki Guni stretch.

## Documentation and Site Survey

### Architectural Styles and Details

Rajniwas Garden is on the south side of the Ghat Ki Guni valley line and is a combination of spaces at three levels. The garden has a high wall along its longer edge crowned with the most interesting architectural features of the complex; a continuous arcade formed of octagonal *chhatris*, three-bay and five-bay pavilions crowned by domes and *bangaldar* roofs with multi-foiled arches and stone columns and finished with fine eaves and cornices. Negotiated by steps at levels this arcade along the valley presents Rajput Mughal architecture at its best with varying roof designs, cusped arches and slender columns. The garden created inside in a double *chahar bagh* pattern showcases other fine elements of Rajput architecture with the upper square adorned by a covered pavilion and the lowest level with a stepped well or *bavdi* complete with corner *chhatris*.

### Water Systems

Sources of water are seasonal except the stepwell which would be perennial and used as main source of water most of the time. Three types of water chan-

nels/pipes were found in the excavations:

1. Drains for flood irrigation and surface run off;
2. Irrigation channels; and,
3. Water channels for garden aesthetics.

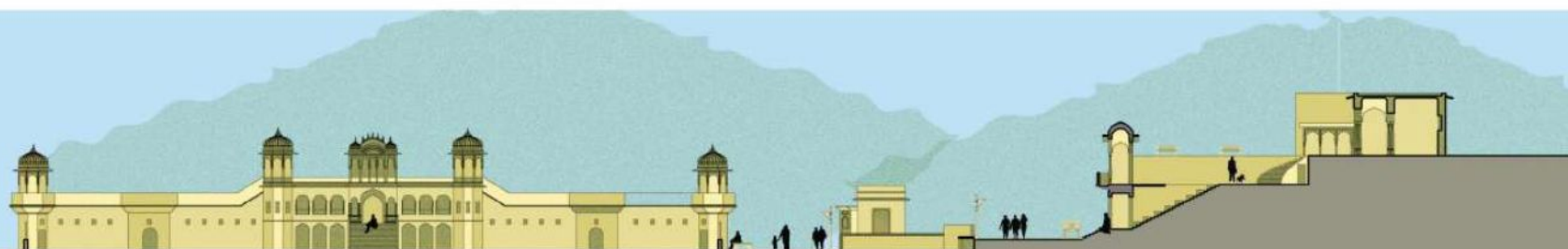
The mechanism of lifting water was the Persian wheel evidenced by the stepped well. The method of water distribution to garden/ planting beds was through the irrigation channels and additional drains for flood irrigation. The fountains in the upper area were fed through lime plastered pipes found in the excavations while the tanks and step well through underground water channels.

### Materials and Construction Technology

The structure comprises of lime plastered random rubble stone masonry set in lime mortar. The roof form is either flat with stone *pattis* or in some cases slightly curved with corbelling. The *chhatris* have their own cut-stone roofing of varying styles – *chautar*, *bangridar* and *tabridar*. Lime concrete terracing locally called *dhar* finished with smooth lime wash is evident in most areas. Even remains of garden pathways and drains, water pond show evidence of similar material at rimes finished with smooth lime or *arraish*. The base of the stepped well is finished with stone pieces in a random pattern. Interior spaces show flooring of either lime with *arraish* finish or hand dressed sandstone in some areas.

THIS PAGE | **Rendered elevation of the entrance built structure of the Roopniwas**

FACING PAGE | CLOCKWISE FROM TOP LEFT  
**Rajniwas exterior wall prior to conservation, 2007**  
**Aerial view of Rajniwas, June 2009**  
**Rajniwas exterior wall after conservation, 2009**





Elements such as brackets, parapets, *chattris* and canopies, columns are built with locally quarried quartzite displaying intricate stone carving in certain areas like the Palace and the *baradari*. Artwork in the interiors is present as lime stucco work and wall murals both inside the palace area and in the central *baradari*.

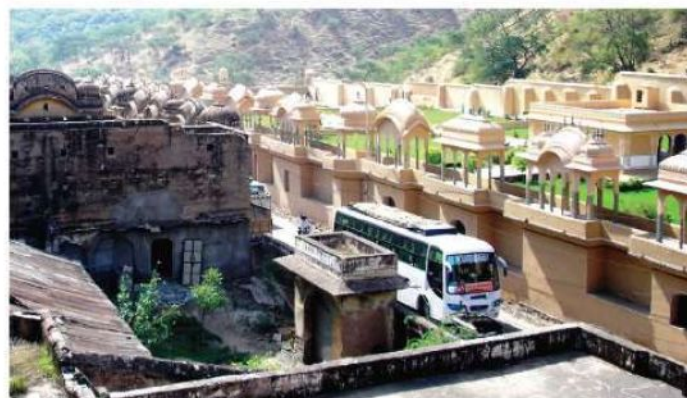
### Condition Assessment

The open garden spaces are located at three levels with retaining walls in between to demarcate the levels. These spaces were in very poor condition with vegetation overgrowth, surface undula-

tions and damaged or inclined retaining walls and loose stone paving at edges. The paved area outside Roopniwas was in fair condition. The paved area at the entrance needed to be leveled and repaired with new stone flooring set in lime mortar. The garden spaces also required immediate cleaning, removal of excess vegetation, leveling of the three distinct spaces, consolidation of the retaining walls and restoration of the original Rajput Mughal landscaping with indigenous trees and plants. Pathways were re-laid in similar material with lime concrete base (*dhar*). However, the original *arraish* finish on pathways was avoided since it cannot take heavy wear and tear.

The central *baradari* was also in very poor condition with damaged plaster, shrinkage cracks in walls, artwork hidden by later layers of plaster, dampness in ceiling and misuse of the space as a garbage dump. The place has been recently cleaned for further restoration work. The *baradari* spaces required re-laying of the roof in the central area, cleaning of walls and columns, grouting of cracks in lime mortar, removal of ceiling plaster and restoration of fresco work.

The Roopniwas block was in fair condition with no structural cracks. It showed later interventions such as insertion of walls and openings in brick and cement.



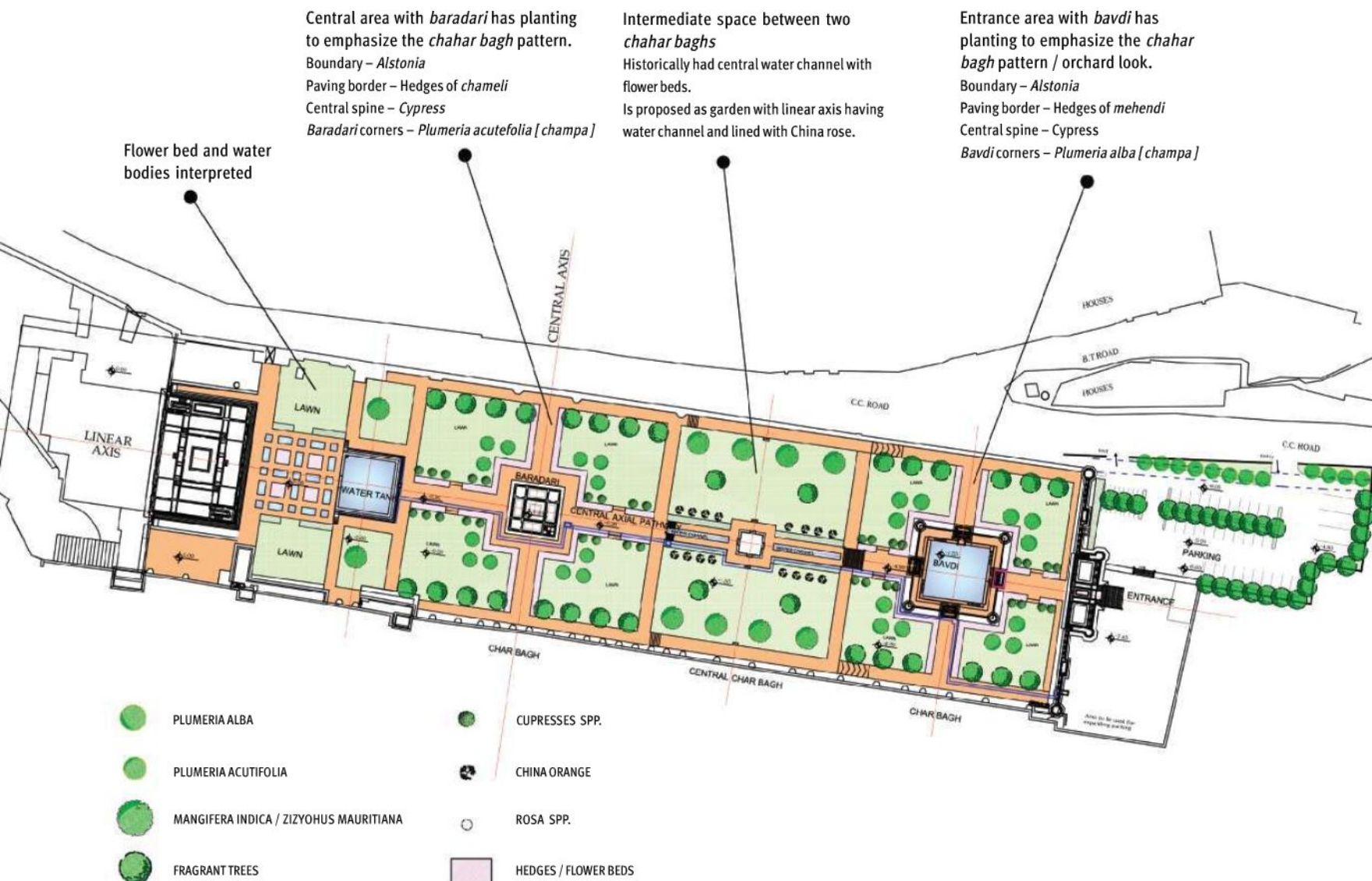


## LANDSCAPE OF RAJNIWAS TO RESTORE

- The ambience of Moonlight Garden with emphasis on the linear axis through paving and linear planting of Cypress and China rose
- Plantation scheme to include white flowering and fragrant shrubs/trees such as *Champa*, *Alstonia* etc. that are typical of moonlight Mughal gardens
- Central water channel with pond and bavdi can be revived seasonally. The remaining channels / water systems to be interpreted with bluish paving stone
- Paving width to follow the historic proportions [  $\frac{3}{7}X$ , where  $X = 1.67m$  ]



## Rajniwas Gardens – Planting proposal



...an evening garden, naturally, means a white garden, all other flowers being lost in the dusk of their leaves...



It required removal of recent cement work interventions and restoration to its original condition. Two structural arches that were replaced later with girders had to be reconstructed to match the existing ones. The entire facade was repaired with cleaning of stone *chattris*, lime plaster and appropriate lighting of the historic fabric.

The water pond in front of the Roopniwas is the highest water structure on site initiating the water flow in the gardens. The stone parapets of this pond were damaged and largely broken at edges. The water drains run down through the length of this *chahar bagh* to the next level. At the second level, a small platform in the centre has water channels around it. The channels finally reach the last level of the stepped well. This is an interesting structure with surrounding arcades stands aligned with the main entrance. The surrounding parapets made in thick lime mortar and *lakhori* bricks were broken at several places. The stone brackets and *chajjas* were loose, damaged or missing in most places. The water channels running on either side feed the stepwell through a pit as well as allow runoff outside the site. The original water network of Rajniwas Garden had to be restored. All existing water channels running along the garden were repaired and restored. More channels if found in further excavation should also be cleaned and protected.

## Design & Planting Concept

The Roopniwas block and Rajniwas Garden is currently restored to its original status and will be reused in consonance with a more holistic scheme for the conservation and development of the Ghat ki Guni stretch prepared in 2009.

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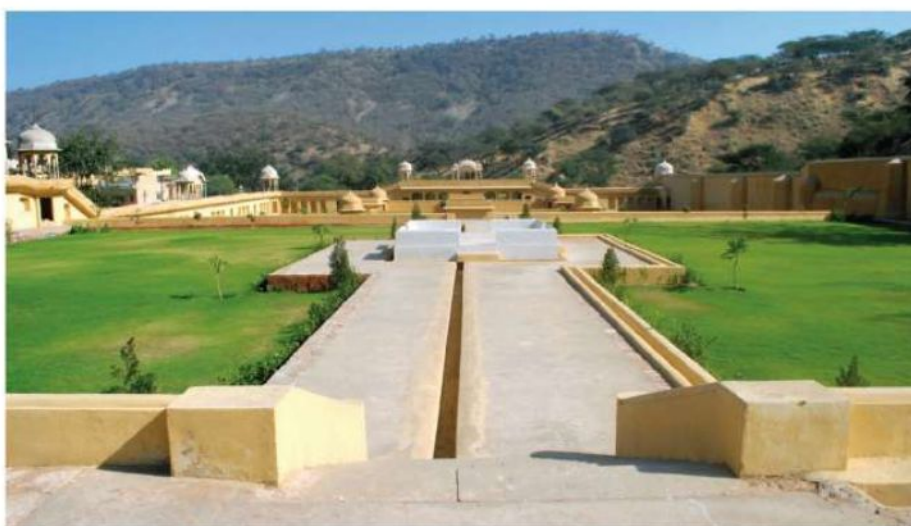
**Rajniwas Garden under Archaeological Survey of India – ASI, 2007; Work in progress, July 2008; and, Conserved central pathway, June 2009**

An excerpt by CM Villiers Stuart from ‘Gardens of the Great Mughals’ explains the basis for the planting proposal:

*“An evening garden, naturally, means a white garden, all other flowers being lost in the dusk of their leaves. So, many of the favourite Hindu flowers are white, like the champaka and double jasmine buds used for wreaths. Among others are white poppies, tuberose, datura, white petunia, stephanotis, magnolias, and gardenias of various kinds as well as the night opening flowers, the white scented cactus (Cereus grandiflora), the moon-creeper convolvulus called soma-vel (Calonyction speciosum), which when in bloom makes such a magical effect, and the white lotus... Although the Mughal garden under the influence of Hindu customs became essentially a moonlight one, yet there was one month in the year, Sawan (the middle rains), when the palace ladies went down to see how their gardens fared by day.”*

The design and planning of the Roopniwas and Rajniwas Garden provide an ideal opportunity for adaptive reuse. The garden may be used for recreation during the day and as a social space during the evenings. Sisodia Garden located in close proximity is a popular destination for celebrations and weddings, and a similar usage for the Roopniwas will complement the existing situation. The historic built form provides a scenic setting and can be developed for indoor catering and be used as an interpretation space for the garden.

The original planning principles have been analyzed through careful site study and through archival references, and as far as possible the attempt has been to retain and enhance these principles. At places where evidence of past practices is missing or fragmented, a policy of minimal intervention has been followed.





The linear axis planning has been emphasized through paving and planting, and the original water systems have been retained and enhanced. The planting concept has been centered on the gardens historic use as a moonlit pleasure garden and to this end, white flowering shrubs and trees such as *Champa*, *Alstonia* have been used. Cypress, which is a universal feature of Mughal gardens, has been used to emphasize the linearity of the central axis. It is proposed that the central water system and the step-well be revived, at least seasonally. Facilities such as parking have been provided for ease of accessibility.

The lighting scheme incorporates the intricate detailing of the built structures and highlights the boundary walls as well as the central structures. Subdued lighting has been preferred in the lawns so that visitors may be able to appreciate the moonlit gardens in the manner that it was originally intended.

The built structures on the site have been conserved using traditional materials and finishes such as *arraish* which is a traditional lime finish. The decorative patterns have been reinstated wherever possible. It is envisioned that the Roopniwas and Rajniwas Gardens will reflect the glorious past of the Ghat ki Guni and provide an impetus for the overall development for the entire Ghat ki Guni stretch.

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## Project

**Roopniwas and Rajniwas Garden**

## Location

**Ghat ki Guni (Purana Ghat), Jaipur, Rajasthan**

## Total Area

**5 Acres (approximately)**

## Client / Developer

**Amber Development and Management Authority (ADMA), Jaipur**

**Mr S. Ahmed, CEO, ADMA**

**Mr P. K. Jain, Executive Director, ADMA**

## Landscape Design Team

**Development and Research Organisation for Nature, Arts and Heritage (DRONAH), Gurgaon**

## Architects

**Dr. Shikha Jain (Project Director), Gurgaon**

**Dr. Suchandra Bhardan (Landscape Consultant), Kolkata**

**Vanicka Arora (Documentation & Drawings), Gurgaon**

## Other Consultants

**Cheena Kanwal (Environment Specialist), Shimla**

**Dr. Ajay Khare (Conservation Specialist), Ranchi**

## Year of Commencement | Completion

**June 2007 – Ongoing**

**Civil work completed, plantation in progress**



**Rajniwas Garden planting in progress, June 2009**

**Dr Shikha Jain** is director, DRONAH, an organization involved in the causes of regeneration, restoration, upliftment and development in built heritage, ecology and environment and community living. She is the Convener of Indian National Trust for Art and Cultural Heritage, (INTACH) Haryana Chapter and a Founding Trustee of the Indian Heritage Cities Network Foundation, supported by UNESCO. She can be contacted at [dronah@gmail.com](mailto:dronah@gmail.com)

|All images / drawings courtesy the author



Dr Uma Vaidya

# LANDSCAPE ARCHITECTURE IN ANCIENT INDIA

SEASONAL SIGNIFICANCE & EMOTIVE ELEMENT





PREVIOUS PAGE | *Kridaparvataka* – a play-mountain, a special feature of royal mansions. Plot-selection – hilly area, ground-water availability and shady trees. Landscape plays an important role as an instrument to change the mood. The love-fever and depression of the hero transforms in to eagerness and enthusiasm for meeting the beloved.

FACING PAGE | LEFT | *Himagriha* – approach road from *Kridaparvataka*. Well-decorated with trees blooming at different seasons; Fragrant, cool and colourful all through the year; Plantain trees at both sides of the road; and, Lotus-pond with elephant-babies playing.

Ancient Indian knowledge systems have placed India on the universal map of scholarship prominently. Amongst these systems, the science of architecture was very well-developed as is evidenced by marvelous buildings with wonderful architectural concepts. Ancient Sanskrit literature exhibits some exclusive pieces of landscape designs through occasional descriptions, though it was not the main objective of Sanskrit poets. It is well-known that classical Sanskrit literature is mostly court-poetry and thus, it is studied with the descriptions of royal courts, royal mansions and the royal love-affairs.

At the same time, it must be noted that in the Sanskrit language it is not only famous poets like Kalidasa who were associated with landscape descriptions but there exist several other literary works like novels, plays etc. which illustrate various landscape concepts. These portray a colourful picture of prosperous kings with all their artistic passions fulfilled through wealth and architectural skills. The interiors and exteriors of these mansions are not only of gold, silver, diamonds and jewels but there are colourful flowers with their fragrance and tenderness to compete with jewels. Rocky mounds with rivulets add to the beauty

of the landscape-designs of these mansions. Based on the available natural resources, a number of designs were prepared such as amusement-parks, play-gardens, play-mounts, summer-houses, autumn-houses and even the ocean-resorts.

This article describes a few structures which do not form a part of the main dwelling but without which the royal mansions are incomplete. If the art of planning and developing the outdoor space is called 'landscape design' then starting from the porch or an arch to the surrounding pleasure gardens, all form a part of landscape architecture. These landscape designs not only add to the beauty of the main structure but have a very special role to play.

A deep study of Sanskrit literature makes it clear that Sanskrit poets had sufficient knowledge of landscape architecture though they were not architects by profession. The beauty of various concepts of those landscape designs lie in their seasonal significance and reflect consistency with human moods. It is very important to note that the descriptions of these landscape designs show that they are not lifeless buildings made out of mud, bricks and fly-ash, or even with natural resources like water or small rocky hills, but that they are the lively characters sharing one's moments of joy or sorrow. Not only that but they have a definite role to play in a certain situations. It is also observed that most of these descriptions are found in the dramas where stage-arrangements are to be made for a particular scene. Thus, these descriptions serve as the guidelines to drapery and background for the scene. The point therefore, is that these occasional descriptions are not the fancy of the poetic imagination but they were supported by their actual application in the stage-performance. This article presents

three important concepts and designs of landscape from Sanskrit literature.

### *Kridaparvataka*

The first landscape concept is taken from a long story, 'Kadambari' – authored by the great Sanskrit poet Banabhatta. In the story, the lovelorn hero and heroine, separated from each other were restless. The heroine Kadambari had become pale as her health was affected by love-fever. The hero was also depressed and felt dejected but tried to meet her. As he travelled a long way to reach her, he rested at a small mountain designed with a mound in the vicinity of a royal palace before meeting her. Such a type of play-mountain was a special feature of the royal mansions at that time and was called *kridaparvataka*.

A beautiful description with minute details is available in the story though it is not the objective of the author.<sup>1</sup> The designer must first prepare the entire design of the royal palace keeping the surrounding landscape in his mind. Then the plot where such a building is to be erected be searched with some hilly area, ground-water availability and with at least a few shady trees. These natural resources add to the beauty and glory of the royal mansion.

The play-mountain in the story was situated slightly away from the main royal dwelling but the entire view of this mound is covered from the windows and balconies of the kingly palace. According to the available description, the prince rested on a stone-slab. It was covered with a pleasant shady place under trees. The green creepers were sprinkled by a stream flowing from an alligator-shaped aqueduct made of slab of emerald and the whole area was bedewed with spray. He bathed on a large and wide stone which is thickly covered with swarms of bees sticking to it owing to the perfume



of the scented water which he used for bath. The hero then worshipped the trident-wielding god Shiva on the bank of this mountain rivulet, sandy with flower-pollen. He dined on the slab of crystal rock which by its lustre puts even the Moon to shame. He slept on a broad slab of pearl rock and the rock in return also got the mark of the sandal-paste transferred to it from his body.

This mountain was named as 'Mattamayuraka' because the pairs of domesticated peacocks which settled there. The peacocks were intoxicated by the beauty of nature, and thus the title is 'Mattamayuraka'. The scene of the pair of intoxicated peacocks on the background of the play-mount is also the sign of union and thus, it is very clear from the description that this wonderful landscape design was prepared with a very special objective.

After spending some time in the vicinity of this play-mount the mood of the hero changed. The hero was also suffering from the agonies of separation as was the heroine and so he was not in happy mood when he arrived at this place. But as he was going to meet his beloved and by travelling through the *kridaparvataka*, his earlier passive mood, the dejection, the feeling of hollowness of the world without her was transformed into eagerness and enthusiasm. This is precisely the emotive element of landscape design.

### Himagriha

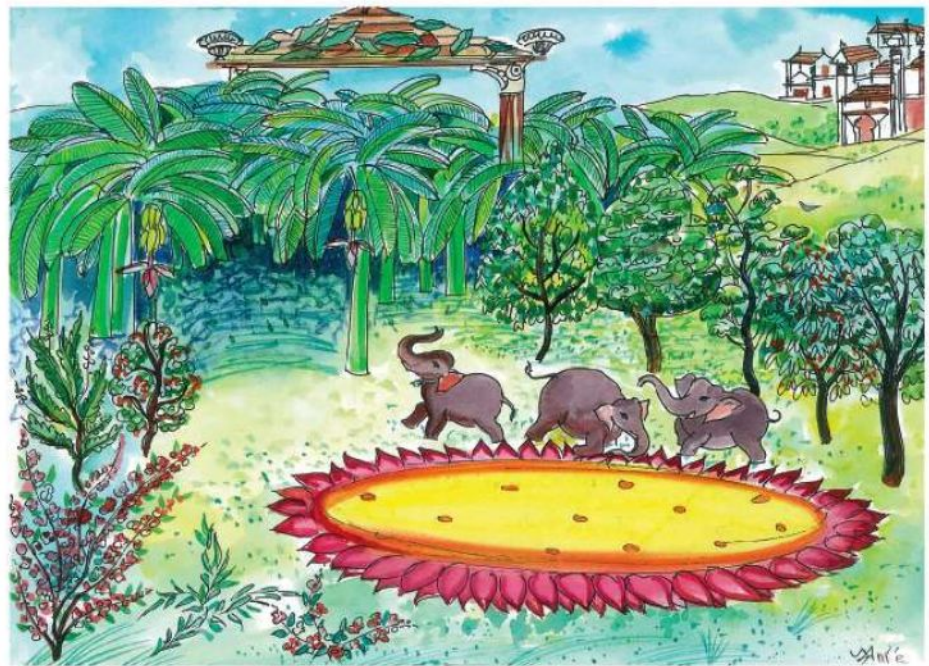
The play-mount was situated on the way to the *himagriha*<sup>2</sup> where the love-lorn heroine was trying to cool her mind and body as she was upset because of love-fever. It is very clear that the hero crossing the play-mount was in happy and fresh mood before meeting her and the whole purpose of the design of the play-mount was fulfilled. The play-mount is

not only shady but there, the breeze is also fragrant and dewy which very gently soothed his mind. Members of the royal family also used to enjoy the landscape in its colourful mood. Some small wooded hills were also designed for the children to play slightly away from the *kridaparvataka*. After crossing the *kridaparvataka*, the hero entered into the autumn-house.

The love-sick maiden from a Gandharva-family, who is the heroine of the same story titled as 'Kadambari',

house for fighting cold in winter-season. The other more appropriate explanation is that it is a house where winter itself resides. Individuals exhausted by the hot summer rejuvenate themselves in it. With the appropriate landscape elements and with few artificial objects, it is kept cool.

Before entering the snow-house, the hero was to travel along the approach road. The snow-house was erected at the feet of the *kridaparvataka* on the banks of an oblong pond full of lotus-beds. The bright rays of the sun were reflected back by



tried to pacify her love-fever, which was caused by the separation from her lover, in the snow-house or the autumn-house, [*himagriha* as is called in Sanskrit] where all the required accessories and amenities are provided, both natural and artificial. Words like summer-house or winter-house or even autumn-house can be interpreted in two ways. For example, a winter-house is a place where people stay during the winter season. A house which is warm inside with heating appliances can be called a winter-house i.e. a

the emerald like plantain leaves, turning them as it were green blades of grass. It was the outer scene of the house, very pleasing to the eye. The main apartment of *himagriha* is a little inside this beautiful scene and probably in the midst of those plantain-leaves.

Even the pathway from *kridaparvataka* to the *himagriha* was well-designed with trees blooming at different seasons so that the area would be cool, fragrant, and colourful all through the year. The house



was thatched all round with thickly piled lotus-leaves to ward off the heat from the sun. The reason for the roofs to be covered with lotus-leaves appears to be that their waxy surface does not allow the water to stick and secondly, these have medicinal uses as well.<sup>3</sup>

One had to walk underneath the arches of plantain-trees, the plinths of which are formed of sandal-paste, which were furnished with bells in the form of buds of white lotuses. It had *chouries* [hand-fans] made of bunches of full-blown *Sindhuvara* flowers and there were hanging wreaths of large-sized buds of *Mallika* flowers. *Sindhuvara* flowers are the flowers of *Nirgudi*, the five-leaved chaste tree and the flowers are useful as medical cure.<sup>4</sup> The large auspicious

wreaths, made up of *Lavanga* leaves were fastened and the banners made up of chaplets of lotuses would swing to and fro. All this was guarded by the female door-keepers who themselves were images of the beauty of spring.

As one travelled along the approach road, figures of peacocks were placed which worked by mechanism and looking grey with the thick spray of stream of water are adding to the beauty as if the heroine inside is the maid of the mist. This water spray was placed on the tops of fountain-houses which were built of lotus stalks. Grass plots were formed by means of the filaments of *Shirisha* flowers. Ponds full of golden lotuses which were being disturbed by groups of artificial figures of cubs of elephants made to

sport therein. There were also wells of scented water the bases of which were made up of molten gold. The water-wheels were furnished with pots of leaves which were being fastened with the ropes consisting of lotus garlands. The spokes were made of long thick stems of tender lotus stalks and which were provided with artificial water-troughs made up of leaves of *Ketaka* flowers.

In some places, there were artificial lines of clouds that were made to move about in the sky. The streams of water were being poured forth on flocks of artificial cranes made of crystals and over which the rainbow is painted and when they move it looks like the scattered pieces of the rainbow. There were strings of pearl-





necklaces, being cooled in wells containing sandal-juice. There were artificial trees with working mechanisms along the approach road, the water-basins of which were constructed with the powder of pearls and which were continually ejecting showers of big drops of water. Mechanically driven rows of birds made of green leaves would scatter the water spray around by the flapping of their wings and thus creating a misty appearance in that area.

The main space in the *himagriha* was a room furnished with cooling appliances. Outside this room, juices of cooling herbs were placed in stone-made vessels which were being fanned by lotus leaves. It was as if it were a place for all the rivers to remove the heat of the summer – a habitation for all the oceans to remove the heat of subterranean fire. It was a place for all the clouds to counteract the heat of the fire of lightning. It was protected on all the sides from the sun. The rays of the sun were reflected back by thousands of water-jets from the fountain and it appeared as if the rays have returned to the sun, afraid of the extremely cool touch.

Located in an open space, the house was open to the breeze laden with the scent of *Kadamba* flowers. The *himagriha* was enclosed within plantain-groves and their leaves would flutter in the wind as if they were shivering from the cold. The house was adorned with creepers, covered with densely crowded swarms of bees that appeared as if they were wearing dark cloaks to keep off cold.<sup>5</sup> Irrespective of any season in the natural cycle present outside, this place was made for a particular season to stay and there by facilitate the stay of people in different moods. Such a house was this created with a very emotive objective.

With all these cooling objects, an outsider entering in, thinks that his mind is as if made up of moon, his bodily organs of night-lotuses, his limbs of moonlight and his intellect of lotus-fibres. He experiences the cool breezes as of camphor and all the three worlds made up of snow. In addition to this natural landscape, there were many man-made objects kept as the accessories to pacify the mental heat of torture in separation. There were statues made up of an ice-slab providing a cold touch to the body. There were dolls made up of camphor and sandal paste, playing with which released coolness as well as fragrance. The scientific use was well-known to people. Camphor works as bronchodilator and helps smooth breathing. The unsteady heartbeats due to restlessness are settled with normal breathing.

With this cooling effect in the house, the heroine was lying on a couch of flowers underneath a small pavilion which had pillars of lotus-stalks and which was surrounded by a stream of camphor juice made to flow around it in a winding manner of a canal.

It is interesting to observe that the similes that the poet has used in the description of the *himagriha* are also in conformity with the landscape. The heroine surrounded by her fair and lovely friends looks like the Ganges with her retinue of all tributary rivers lying on the floor of a cave of the Himalayan mountain.<sup>6</sup> Such was the snow-house that even its description creates pleasant shivers in the mind of the reader and the wonderful *rasa* delineation.



**FACING PAGE |** *Himagriha – main pavilion. Erected at the feet of the Kridaparvataka on the banks of an oblong pond full of lotus-beds and in the midst of plantain-leaves; Roofs thatched with thickly piled lotus-leaves; Chauries of Sinduvarya-flowers [Nirgudi]; and, Vessels of camphor-fluid.*

**THIS PAGE |** *The water-basin and the maid of the mist – Artificial trees worked by mechanism, the water-basin which continually ejects showers of big drops of water; Machine-worked rows of birds made of green leaves which scatter around the water spray by the flapping of their wings and make a misty appearance, and therefore, the heroine inside looks like the maid of the mist.*



## Samudragriha

*Samudragriha* means a sea-house. In 'Pratima-nataka', one finds that the king Dasharatha, passed his last days in a sea-house where he tried to get peace of mind away from the tortures of the day to day life.<sup>7</sup> One also comes across the description of the same type of *samudragriha* in another drama entitled as 'Swapnavasavadattam' where the heroine, suffering from headache was placed along with all that was necessary to cure the disease in such a room, the natural remedies coming through the contribution of landscape and also the man-made.

It seems to have been a normal practice of that time to erect a sea-house in the outer area of a garden for one comes across numerous references to such a house. It was different from the snow-house since it was built for a different purpose. The

*samudragrihas* are of two types – one that was situated in the middle of a lake on a single pillar and was called *samudragriha* because it was built over water. It is said that a summer-house built over water or an ocean-pavilion as if the house is attached with water-ponds is called as *samudragriha*.

Another type is a house surrounded by the jets of water which are called *mudras* in Sanskrit and thus a house with water-jets is called *samudragriham* [*Mudrabhih sahitam iti*]. This type of *samudragriha* house can be built in a palace garden which also becomes a beautiful feature of landscape design. An authentic treatise – 'Haravali' explains the word *samudragriha* as a house with water-machine *samudragriham-ityuktam jala-yantraniketanam*.<sup>8</sup> Generally, its outer arch

**Samudragriha – A house surrounded with water-jets. There is periodical ejecting of water. Of course, a natural water-source required for a *samudragriham*.**





had straight, long and dangling flower-garlands which swayed in the gentle breezes. There were evenly spread beds with unruffled covers. There were also charming arrangements to engage the eyes. There was always deem light with maintained temperature and the house was always surrounded by cool water-channels.

There are three important references to this *jalamandira* in the 4th century BC. and 4th century AD. From those references, it is clear that such a construction was an essential and prestigious part of the royal mansion. The sole objective of this construction was different from that of *himagriha*. It was primarily a place for a person with disturbed, unstable mind who preferred to remain in a secluded place, or for a diseased person. As mentioned earlier, Dasharatha, was taken there as he was first unconscious and then unmindful due to separation from his son Rama as his Queen Kaikeyi had sent Rama to exile. To such patients, *samudragriha* was a place to pacify and give peace and calmness to the mind. Another other episode that refers to this place is from the play 'Swapnavasavadattam'. Here, the queen of King Udayana, Padmavati is supposed to have rested in a *samudragriha* as she was suffering from headache. In an another instance, in the drama titled as 'Malavikagnimitram', it is the *vidushaka* who made the heroine and her friend wait in the *samudragriha* for the king.<sup>9</sup> This being a secluded place, nobody would disturb the persons resting her.

The accessories placed here included the beautiful portraits of family members especially of the young ladies and queens, various flower-arrangements [specially with the white-flowers], the garlands of fragrant flowers hanging on

doors and arches and many other objects of taste to pacify the diseased mind and body. Thus, this house not only provided medicinal help but the landscape and the interior both went hand in hand and fulfilled the emotive objective of this type of architecture. A person in distress was taken away to this house from daily crowds of people and was entertained with various means.

In these landscape designs, it appears that people of all age-groups were taken care of. The small wooden mounts with deer etc., near the *kridaparvataka* were meant for small children. The *kridaparvataka* and the *pramadavana* in its vicinity were for the youths. The *samudragriha* was for old ones or for the diseased.

This also throws light on the ancient Indian philosophy of life. The Indian sages of remote antiquity were not passive about life. They had many ways and means to enjoy life. The *dharma*, *artha*, *kama* and *moksha* were the four goals of life. In general, the ages twenty-five to fifty is the right period for all kinds of pleasures and fulfillments of desires, which is called *grihasthashrama*. These landscape designs in the royal mansions are the proof of the positive attitude of those sage-architects towards life. They were never pessimistic, and they were not engaged in search of the invisible God by closing the eyes and renouncing the worldly life. On the contrary, they were experts in using the available resources creatively and living a happy life. They certainly had the fourth goal of life as *moksha* but that was to be achieved only after going through the earlier three stages.

These landscape schemes were not the products of mere fancy but that of practical thought. One finds that these descriptions have come from the dramatists who were quite aware of the stage drapery and

experts in creating scenes with stage-accessories. Thus, to help the stage-director in making the scenes lively and true, they have described these landscapes in minute detail thus giving them a realistic look.

This article, then, not only brings out the seasonal significance of these landscape designs but also looks at the creative use of natural elements like land, water and plants and reflects on its impact on human emotions. There are *chaitya-prasadas*, picture-galleries etc. outside the mansion which create a fine blend of prosperity and high taste. These constructions were attractive, beautiful, pleasant, comfortable and environment-friendly too. Such wonderful work of architecture and landscape was called a dazzling piece of heaven brought on the earth.<sup>10</sup>

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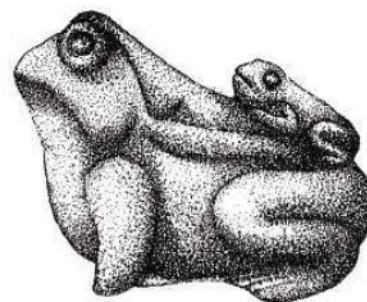
**Dr Uma Vaidya** is R.G. Bhandarkar Professor at Department of Sanskrit, University of Mumbai. She can be reached at [umacvaidya@yahoo.co.in](mailto:umacvaidya@yahoo.co.in)



Ng Kok Hong

# GARDEN POND MANAGEMENT

FROM SCIENCE TO DESIGN



**T**he garden, a symbol of paradise is never complete without shade and water. The architecture of the past and the present appears incomplete without the presence of living water in the design. Water has inspired Islamic garden for centuries and it is still a prominent feature in today's architecture and landscapes.

The pond in a garden brings about a kind of comfort that mysteriously stimulates both the mind and senses. The garden pond needs to be designed with respect and understanding as a bad design can be disastrous not only to functioning of the pond itself but ultimately the surrounding environment as well.

Water, the element of life, in a garden pond contributes to peace and freshness that manifests itself in relaxation and pleasure. But such a sense of peace and freshness can only be achieved with the success of the water garden with water playing its primary role as the element of relaxation and pleasure. History has recorded the beauty and success of water in the garden but there are also as many failures of water gardens that stem from a poor understanding of its application.

Water itself is a complex element though it reflects its simple form through its purity. It has long been taken to symbolise many forms of rituals and expressions in many cultures and civilisations. Historical records have glorified the use of water in the garden but the limitations on its use is more profound today in a modern society. Environment stress and consciousness affect today's modern architectural and landscape design. The use of water in gardens and in architecture no longer substantiates the old practices of symbolism and rituals but is merely a form of creative or artistic expression. Water in that sense has become an art form and we have lost an understanding of its purity and its life-giving properties.

Water in the garden has always commanded our inspiration to be part of the architectural design that reflects what we have sought after as a form of artificial paradise by design for relaxation and pleasure. Water in gardens is a key and vital element in today's landscape design. Far from being a ritual or symbol, it has become more of an environment that reflects care and responsibility besides being featured for pleasure. To succeed

in ways that has been achieved in past designs for pleasure, we must understand the nature of water itself through both an artistic and scientific approach.

Art in a water garden can be expressed in its creative aspects from shape, volume, colour and form. The expression of water by design has no limits and its physical quality and liquidity are adaptable to all forms of shape and design. The science of water is entirely another aspect altogether. Water in this sense is no longer a mode of expression but is a medium with quantifiable properties, that will have an impact on the surrounding environment. The nature of water itself has to be understood in regards to its physical, chemical and biological qualities besides being able to establish its form in terms of art.

## Nature as inspiration

The best approach to create an artificial aquatic environment or water garden is to look to nature itself. Ponds, lakes, rivers and other aquatic systems thrive symbiotically with other natural components from micro-organisms such as bacteria, micro plankton to large organisms



*Private Villa, Bali – Living with water bodies all round the compound can be attractive provided the quality of water is well taken care of with proper understanding and management.*

nature as inspiration...





# the best approach to design and management of the pond is to understand the way it exists in nature itself



like fishes and macrophytes (plants). These water bodies display their beauty day and night, and across all seasons. In these ecologically balanced systems, all living and non-living beings remain healthy from the constant changes of the water quality.

Such adaptations and constant changes in different aspects of water quality maintain the health of a natural water body and all the flora and fauna that depend on it. The living backbone that holds an aquatic environment in place can break down and render a pond lifeless with the use of chlorine. Chlorine is applied in swimming pools and reflecting ponds as a disinfectant to achieve a clean pool for

swimmers and clear water for reflection. Most microorganisms in chlorinated water have either been deactivated or killed leaving the water body with no ecological function.

A garden pond, therefore, functions without the application of chlorine but due to poor design and lack of understanding of pond and water management, it can still become an unwelcome body of water when it becomes eutrophicated or polluted naturally. Eutrophication is defined as "...having waters rich in mineral and organic nutrients that promote a proliferation of plant life, especially algae, which reduces the dissolved oxygen content and often causes the extinction of other organisms." The best approach to design and management of the pond is to understand the way it exists in nature itself.

## Components of a healthy pond

In nature, undisturbed ponds thrive beautifully with fishes, aquatic plants and other micro and macro components that allow the cycle of nature to fulfil its role and remain a healthy living body. Such cycle of nature can be adapted and applied into artificial ponds in garden. Beneficial ni-

trifying bacteria in natural ponds also occur naturally in designed ponds. These bacteria breakdown compounds into forms that can be assimilated and released back to nature through the nitrogen-cycle. These bacteria that work in nature can be adapted and brought to function in a designed pond with the installation of a biological filtration system. A bio-filtration system can be made or improvised with gravel, sand, nettings, pipes and other cheap available materials by a good, effective and creative design. Overtime, a well designed bio-filtration system will eventually replicate the natural processes by itself.

Naturally healthy ponds are filled with many life-forms including fish that feed on other organisms that keep the natural cycle going and maintain the food chain in the pond. Fish can be kept and adapted into garden pond for the same purpose. Gouramies are best for garden pond to control mosquito larvae. Barbs are best to seek and clean off leftover supplement food. Some, like the Indian Rohu (*Labeo rohita*) graze for algae as food on the pond bottom or the wall, cleaning up what would require to be removed for aesthetic reasons anyway.

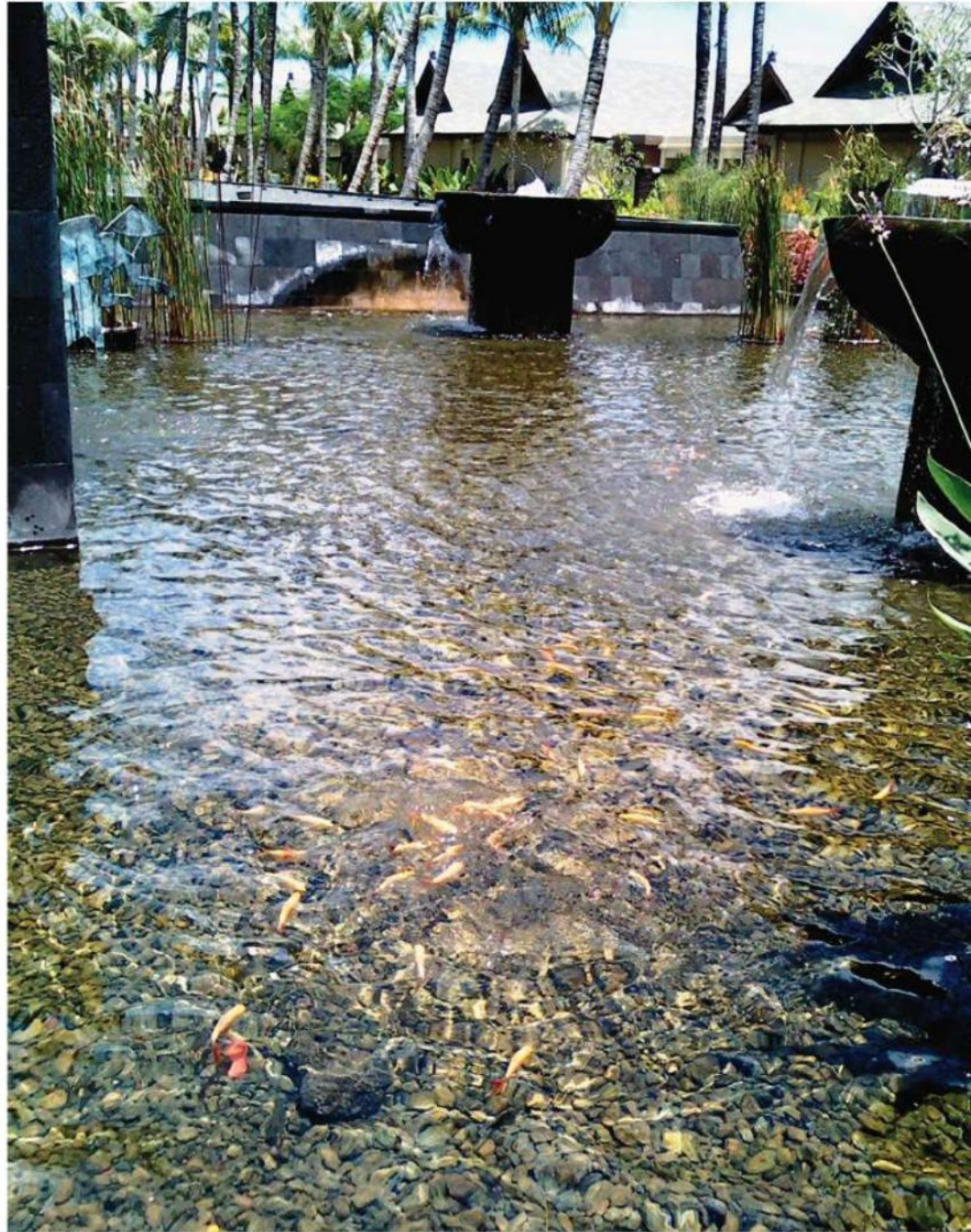




*FACING PAGE | Garden ponds should be enticing rather than a burden in a home garden. Right conceptual approach and application will create a harmony and balance in aquatic body.*

*THIS PAGE | ABOVE LEFT Natural stones are used as bottom substrate covering the bio-filtration circulatory pipes. This pond in the inner court of a spa is maintained clear and crisp through out without much maintenance.*

*THIS PAGE | RIGHT Fishes thrive and spawn in pond like this which is intended to be as natural as possible without any application of chemicals. The pond is to be self-sustainable.*





# adapting natural processes in artificial ponds requires an understanding of the application of art and sciences

Introducing the right and 'functional' type of fishes into a garden pond is important as the fishes play critical roles in pond management and at the same time provide visual pleasure to viewers.

Macrophytes, or plants that grow in water, are natural water filters. These aquatic plants extract nutrients from water as fertilizers for growth. Such processes maintain the level of nutrients to keep the water quality in good state and at the same time allow the plants to thrive as submergents, emergents or floaters. Understanding the ways in which aquatic plants absorb nutrients from water, planting in garden ponds is always beneficial to pond management. Low maintenance plants such as *Pandanus amaryllifolius* grow very well in water. This plant extract nutrients efficiently from water and no artificial fertilising is required at all. The leaves are used in part for cooking and its natural fragrance heightens the aromatic effect of the garden pond. This plant can be planted in pots and designed to be partly submerged or above the water level based on the desired planting plan.

A designed garden pond is still an artificial eco-system unlike a natural pond. In nature, bacteria, planktons, fishes, macrophytes and many more organisms survive and thrive because the water contains a mixture of certain properties that support all these life forms. One of them is dissolved oxygen in water. Without dissolved oxygen in water, living organisms cannot survive. The ecological balance of nature in water is vital in order for the natu-

ral life cycle to continue and for aquatic organisms to survive. There should be a balance of dissolved oxygen enough for bacteria and other organisms such as fish to survive from air-water contact exchange as well as from the process of photosynthesis in phytoplankton and plants. There should also be enough organic nutrients from living matter to allow plants to thrive in order for the phytoplankton or plants to produce dissolved oxygen. Such a cycle of ecological support is balanced naturally in a natural pond.

In a designed pond, dissolved oxygen which is vital for all aquatic organisms can be introduced and controlled. A good circulatory pumping system can be installed to support biological life in an artificial pond by allowing the cycle of nature to run through all components, which will allow them to adapt for long term survival in the pond.

## Summary

With the absence of chlorine, designed ponds for gardens can be made to mimic nature displaying a quality of water that is clear and crisp rather than an eutrophicated collection of dark green masses. In a well designed garden pond, fish swim, breed and feed naturally and as a result supplementary food might not be necessary. Plants may be used to soften and green the hard edges of the pond and these plants will serve to extract excessive nutrients in the water besides releasing oxygen through photo-

synthesis. The artificial fertilizing of the plants is not necessary to maintain healthy level of nutrients in the water. Nitrifying bacteria are made to work through an effective biological filtration system design installed in the artificial pond. The installation of a pumping system allows the water to flow and achieve a running water system with ample dissolved oxygen for all organisms in this designed aquatic environment.

As described earlier, adapting natural processes in an artificial pond requires an understanding of both the application of art and sciences with respect to pond design and management. The outward appearance of a garden pond can be made aesthetically pleasing through creative design and the inner functioning of the pond can be made to work correctly through science, and as a result a successful pond intended for relaxation and pleasure can be achieved.



**Ng Kok Hong** is a Malaysia based artist specialising in water garden design and management – by art and science. His firm Ayer Matahari Sdn Bhd is involved in design and management of pond, lake and other water related project like aquaculture. He can be contacted at [kokhong@ayermatahari.com](mailto:kokhong@ayermatahari.com)  
Website: <http://ayermatahari.com/>

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### Brigade Metropolis



### Contact Details:

# 320, 9th Main, HRBR Layout, 1st Block, Service Road, Banaswadi, Bangalore –560 043

Email: [info@ztclandscapesolutions.com](mailto:info@ztclandscapesolutions.com) Website: [www.ztclandscapesolutions.com](http://www.ztclandscapesolutions.com),

Tel: +91-80-42886100 - 99, Fax: +91-80-42886161, Mob: +91-9980039616, +91-9945200332



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Ravi Gavandi | Varsha Gavandi

# ZENSAR

## TECHNOLOGIES LTD

### PUNE, MAHARASHTRA

WINNER OF ISOLA AWARD\_2010 GENERAL DESIGN CATEGORY AWARD OF EXCELLENCE

The international software company Zensar Technologies proposed its corporate office and development centre at Kharadi near Pune, Maharashtra. Kharadi is on the north-east fringe of Pune, still in its infancy of development. Thus, the architectural character of the areas in vicinity of the site lacks any coherence or identity.

The site is roughly a quadrilateral, around 12 acres in area and is accessed by roads from the north-west and the east side. The terrain of the site slopes from east to west with a fall of approximate six metres. The existing landscape of the site was barren without any trees. There were a few boulders on the site indicating the hard geological strata below. The climate of Pune is pleasant throughout the year and conducive for outdoor living especially in mornings and late afternoons, except for the rainy days in July–September.







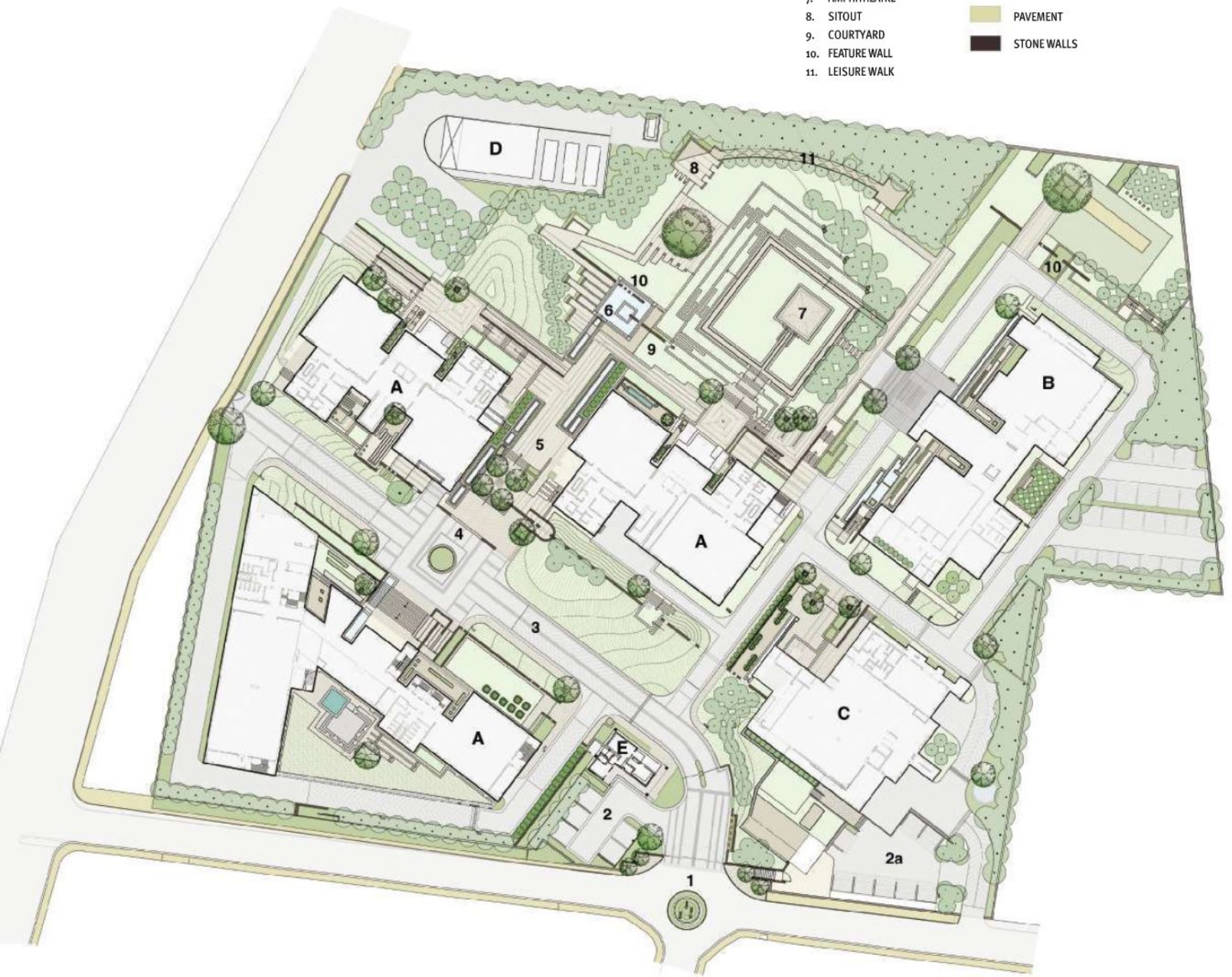
**Landscape Master Plan**

**LEGEND**

- A. DEVELOPMENT BLOCK
- B. CORPORATE BLOCK
- C. RECREATIONAL BLOCK
- D. ELECTRICAL YARD
- E. SECURITY

- 1. ENTRANCE
- 2. VISITORS' PARKING
- 2a. GREEN PARKING
- 3. DRIVEWAY
- 4. DROP OFF
- 5. ENTRANCE PLAZA
- 6. WATER FEATURE
- 7. AMPHITHEATRE
- 8. SITOUT
- 9. COURTYARD
- 10. FEATURE WALL
- 11. LEISURE WALK

- LAWN
- GROUND COVER
- TREES
- WATER
- GRAVEL
- PAVEMENT
- STONE WALLS





## Architectural Design

The architects conceived five multi-storeyed blocks housing the development centres, corporate office and the recreation centre – an outcome of the rigorous program formulation meetings in association with the clients. These multi-storeyed building blocks were approximately sited along the east-west diagonal of the site creating a large open space on the south side. This also resulted in varying plinths of the buildings, the slope of the site being east-west, thus posing a challenge for us to interrelate the buildings and also the associated open spaces. However, close coordination between the offices of the landscape architects and the architects, helped in achieving integration between the buildings and the landscape. Usage of glass for the facades could visually communicate the landscape to the occupants of the buildings, while semi-enclosed courts at various levels allowed them to experience the landscape physically.

## Landscape Design Brief

The functional requirements – a parking lot with a driveway and drop-off point, a

congregation space of 1000 seating capacity, play-courts and outdoor interaction areas, which would be used even in the late evenings – had to be addressed in the landscape brief. The vehicular drop-off points and the building entrances being on the either sides of the blocks, a pedestrian movement spine became an essential requirement. The clients desired an appropriate regional expression as the image of the landscape. Thus, the real task was to conserve the global corporate identity of the company and at the same time evolve a landscape which would be 'Indian' in essence.

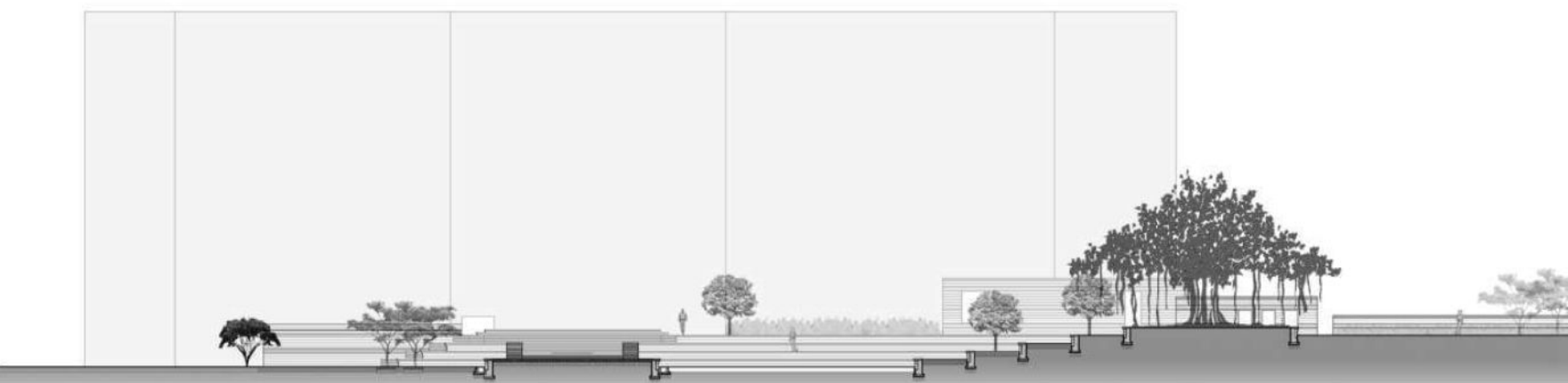
## Landscape Concept

The ideological debate between the "global" and "local" posed challenge. It was conscious decision to adapt a combined approach by marrying modernism and regionalism. The attempt was to evolve a landscape which would address following two important and overlapping issues – the landscape imagery; and, ecological and socio-cultural sustenance. These two were carefully employed while addressing the functional issues pertaining to the use of the space.

## Landscape Imagery

Although the landscape design evolved primarily as a setting for the contemporary modernistic buildings, it established its identity by adapting the quintessence of the oriental thought – "meaning beyond the physical", thus trying to create a space which is eternal and metaphorical. Though the character of the landscape is traditional, the various elements used create contemporary metaphors. For example, the Banyan tree symbolizes longevity and strength of the company, while the 'kund' shaped amphitheatre (now named by the clients as 'sangam' i.e. confluence) is a congregation place of the staff on important occasions and also during lunch hours. Indigenous materials of landscape construction, native and naturalized plants, and traditional elements juxtaposed within a structured landscape have created an environment which is plural and meaningful.

**BELOW | Section through amphitheatre. The Banyan tree symbolizes longevity and strength of the company, while the 'kund' shaped amphitheatre – 'sangam' is a congregation place of the staff.**





# the ideological debate between the “global” and “local” posed challenge



**THIS & FACING PAGES** | *Clean geometric form and lines, muted colours bring harmony to the composition and also echo the modernistic language of the buildings. The gradual slope of the site helped in generating an ascent and rendering interest. Adoption of local materials and engaging indigenous craftsmen and techniques was a purposeful strategy to encourage local skills and native traditions.*

## Sustenance

Adoption of local materials such as the basalt stone, Shahabad stone tiles and engaging the indigenous craftsmen and techniques for working with these materials was a purposeful strategy to encourage local skills and native traditions. Such a strategy, though a small contribution, surely can provide a fillip for native traditions.

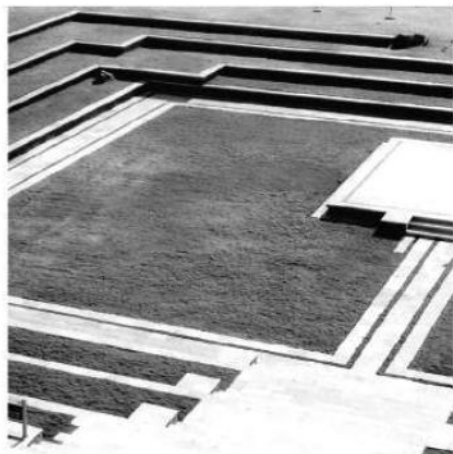
In the case of planting, native and some naturalized species were chosen to support self-sustenance of the landscape. Planting patterns were fashioned on the lines of the groves and orchards which characterize traditional Indian landscape.

The choice of trees thus made would not

only contribute to the regional ecology but also generate settings which refer to traditional images of Indian landscape. For instance, the Banyan / Peepal used as singular focal trees or the group of *Kadamba* generate a meaningful place for shade and repose.

Water used to cool and humidify the outdoor spaces makes these spaces usable during the lunch hour. Rainwater harvesting is employed by providing recharge pits, bore holes etc. Use of native and local trees, using key species aided the idea of habitat creation. Reuse of treated water for irrigation is also an important feature of the development. Considering the rocky character of the site, earth fill was preferred to the cut, while grading the site.







## Landscape Structure

The vehicular access roads dictated the north side to be an entry and vehicular zone comprising of the parking lot and the corporate block, while the south side became the interaction and the amphitheatre space. The space between the building blocks connecting the building entries as well as the two main spaces is an important pedestrian movement axis. Due to the architectural disposition of the movement through the landscape, the landscape engages the users with it experientially rather than remaining simply as a visual pattern. This pedestrian axis on one end has the fog pool and the Banyan tree while on the other end has the entry court defined by *Plumeria* trees.

The landscape is orthogonally structured following the building lines. These lines are further emphasized by the trimmed hedges, paving pattern, linear reflecting pools and stone walls. The clean geometric form and lines, muted colours bring harmony to the composition and also echo the modernistic language of the buildings.

The architects suggested the concept of a screen wall to screen off the service areas and scale down the buildings. Continuing the same idea, a series of walls were introduced in the landscape which run in an east-west direction. These walls not only achieve the goals initially intended, but also help in establishing a landscape framework. These also controlling the revealing of the views of the open space and the buildings. As mentioned earlier, these walls constructed in local materials and techniques constantly evoke a reference to the past. The subtle surface relief on the walls created using the masonry patterns further make the walls as objects of art in this landscape.

The strong forms of the sculptural trees like the *Plumeria*, Banyan, bamboo etc. accentuate the pedestrian axis and also establish a level of formality along the buildings, while groves of native trees like *Lagerstroemia*, *Bauhinia*, *Kadamba* etc. define the open space boundaries.

The site planning of the buildings had clearly defined the vehicular and pedestrian areas as separated from each other. The spaces between the road and the buildings are carefully designed to form foregrounds for the structures. The sloping mounds connecting the buildings and the road help in integrating the buildings with the site. The gradual slope of the site helped in locating the building entrance at a higher level generating an ascent and rendering grandeur to the entry. This rise in level actually conceals the view of the landscape beyond and at the entry the observer is awed with the view of the entry court which comes as a surprise owing to change in spatial character and levels. The drama of the entry is further enhanced by selecting trees with seasonal change and with different visual characteristics.

## Functional Agenda

As briefed by the clients, the spaces are to be used by the employees on a daily basis during the lunch hours, other free times and on special occasions for gatherings. Apart from their visual appeal, the planter walls, *kund*, and canopy trees provide ample opportunities for seating and interaction. Paved decks have been planned for gatherings. These spaces are less encumbered by landscape features in order to provide clear uninterrupted areas for congregations, and have been simply framed by using landscape elements to define their territories.

## Post Occupancy

The landscape design on completion, effectively communicated its intent, through the imagery and behavioural clues. Informal observations of the campus, especially during lunch hours, indicate that people are using these spaces for the use these were designed – to relax and for leisure.

Project **Zensar Technologies Ltd.**

Location **Pune, Maharashtra**

Total Area **10.7 acres**

Client / Developer

**Zensar Technologies Development Centre, Pune**

Landscape Architects

**Ravi & Varsha Gavandi, Pune**

Architects

**Somaya and Kalappa Consultants Pvt. Ltd, Mumbai**

Other Consultants

Structural **Shishir Kulkarni, Mumbai**

Electrical **Design Bureau, Mumbai**

Services

**Engineering Creations**

**Public Health Consultancy Pvt. Ltd., Mumbai**

Water feature

**Deep & Deep Industries, Pune**

Landscape Civil Work Contractor

**Vascon Engineers Pvt. Ltd., Pune**

**Raje and Bhate, Pune**

**M.B.Chitale, Pune**

Landscape Horticulture Contractor

**Nandini Gardens, Pune**

Landscape Irrigation Contractor

**Bharati Enviro Agro, Pune**

Year of Commencement **2002**

Completion of project

**Phase 1 – 2004**

**Phase 2 – 2006**

**Phase 3 – 2007-08**

Total Project Cost **RS. 2.75 Crores**

| All images / drawings courtesy the authors

**Ravi & Varsha Gavandi** are landscape architects based in Pune. They can be reached at [banyan@ravivarsha.com](mailto:banyan@ravivarsha.com)



# the screen walls act as objects of art and help in establishing the landscape framework





Dr Abdul Rehman

Department of Architecture, University of Engineering & Technology, Lahore, Pakistan

# LANDSCAPE DESIGN AND GARDENS IN ISLAMABAD



‘Nature provides the foundation upon which the settlements are created and the frame within which they function...’

Silver coin, Taxila, around 400 BC. Original image: [www.columbia.edu](http://www.columbia.edu)





Islamabad, the capital of Pakistan, is among the few capitals of the world which were planned and constructed in the later half of the twentieth century. Greek planner Constantinos A Doxiadis was commissioned to plan the capital city in 1959 and soon after construction work commenced on a virgin site. The consultant was given clear objectives in the preparation of master plan and program for the development of the city. The master plan was based upon the philosophy of dynapolis and gave a lot of importance to nature. Doxiadis expressed this as "Nature provides the foundation upon which the settlements are created and the frame within which they function." He further elaborated this point with reference to the city of the future in the following words – ...the surface of the city will allow the flora to spread again, beginning from the small gardens within the cells, to major zones of forests above the tunnels of the network, to big farming areas and natural reserves where man will find the rough conditions which he also needs.<sup>1</sup> The idea of dynapolis was inspired from the historic settlements but it was perceived to have grown gradually over a longer period of time. In reality the idea of dynapolis was grounded in the western living tradition. Islamabad is one of the few cities in the world where the services of landscape architects were hired

FACING PAGE

**View of Islamabad c. 1970 from Shakarparian.**

Photo Credit: **Aga Khan Program for Islamic Architecture at MIT**

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**Islamabad is home to Shah Faisal Mosque – the largest mosque in South Asia and the third largest modern mosque in the world. The mosque is a fusion of contemporary lines with the more traditional look of an Arab Bedouin's tent. Its architecture is a departure from the long history of South Asian Muslim architecture with a lack of dome structure. However, it also makes a bridge between Arabic, Turkish, and Mughal architectural traditions.**

**Islamabad** (meaning "abode of Islam") is the new capital of Pakistan located in the Potowar plateau in the footsteps of Margalla Hills. The site is situated on the ancient Grand Trunk Road connecting India in the east and Kabul in the west. The territory is connected with another highway leading to Kashmir in the north. In the mid 1960s, it was felt that Karachi, the first capital of the country, become agglomerated and did not fulfill the function of the capital adequately. Therefore, it was decided to plan a new city near Rawalpindi which would function as interim capital until the construction of important administrative buildings. Islamabad was ranked as a Gamma world city and age-friendly city.

#### Early History

The site of Islamabad is situated among the array of ancient sites and settlements witnessing the oldest imprints of the activities of the ancient man who lived here some half a million years ago. The history of the area began with the Paleolithic Age in the valley of Soan and neighboring areas, including Rawat. The remnants of which have survived in the shape of Paleolithic implements. Later on, the traces of human activity during Neolithic period was found in the Valley of Haro River near the Buddhist site of Bhir Mound. The region of Islamabad also witnessed the advent of the Achaemenian, the Greeks, the Central Asian Turks and many others, and assimilated their religions, cultural and social traits with its own, in order to build up a more advanced and cosmopolitan society.

The site remained under the strong influence of Gandharan culture. Taxila, the major centre of Buddhism and Gandhara culture is situated only 25 Km away from Islamabad. Alexander the Great captured Taxila and appointed Philip, son of Machatas, as satrap with a garrison consisting of Macedonians and mercenaries as well as invalid soldiers. The most convincing site of Sirkup at Taxila was laid out on grid iron pattern with well conceived sites of temples, monasteries shops and university. The layout of communities, location of key public buildings and concepts of urban design brought this site on the world heritage list.

Soon after the death of Alexander the Great, Greeks were compelled to withdraw beyond Hindu Kush. When a Mauryan king, Ashoka adopted Buddhism as the state religion, Gandhara became one of its principal centers. The traces of Buddhist masonry construction as well as relics of Buddhist art were found from the village of Bari Imam. Between 7th to 10th century AD the area came under the direct influence of Hindu Shahiya dynasty at Waihund. Later on occupied the territory in which remained centre of their

The region is not mentioned in the Sultanate period sources until the arrival of the Mughals in the sub-continent. Emperor Babur passed through the area on his Indian campaigns but no specific event is mentioned with him. The later Mughals passed through the area a

number of times for their journey to Kashmir and Kabul. Raja Man Singh visited the town in 988/1580 AD. He liked the place and thought it to be a suitable site for religious purpose. Accordingly he constructed here raised platforms, walled enclosures and a number of ponds bearing the names of Ramakunda, Sitakunda, Lakshmanakunda and Hanumanakunda. In the later years a mandar was constructed adjacent to these pools. The Grand Trunk Road passes through the site on its south west side. The alignment of the road was laid out sometimes in 516 BC. It was later realigned by Sher Shah Suri. Over the years, a number of sarais were built on its entire length at a distance of a day's journey.

During the colonial period (1849-1947) Rawalpindi served as headquarter of the northern command of the British army. A large cantonment was built south side of the town. After independence it continued to serve as headquarter of Pakistan army, a town only 14 miles south east of Islamabad.

#### Construction and Development

In 1958, Federal Capital Commission was constituted to look after the development of new capital. Several expert committees were constituted to examine the suitability of various sites from the point of view of climate, ecology, communication, economic and finance, future expansion, logistics and urban aesthetics. After extensive study, research and review of various sites, the expert groups suggested two different sites north east of Rawalpindi. The present site was finally recommended by the commission. The master plan was prepared in 1959 and immediately construction commenced on the site.

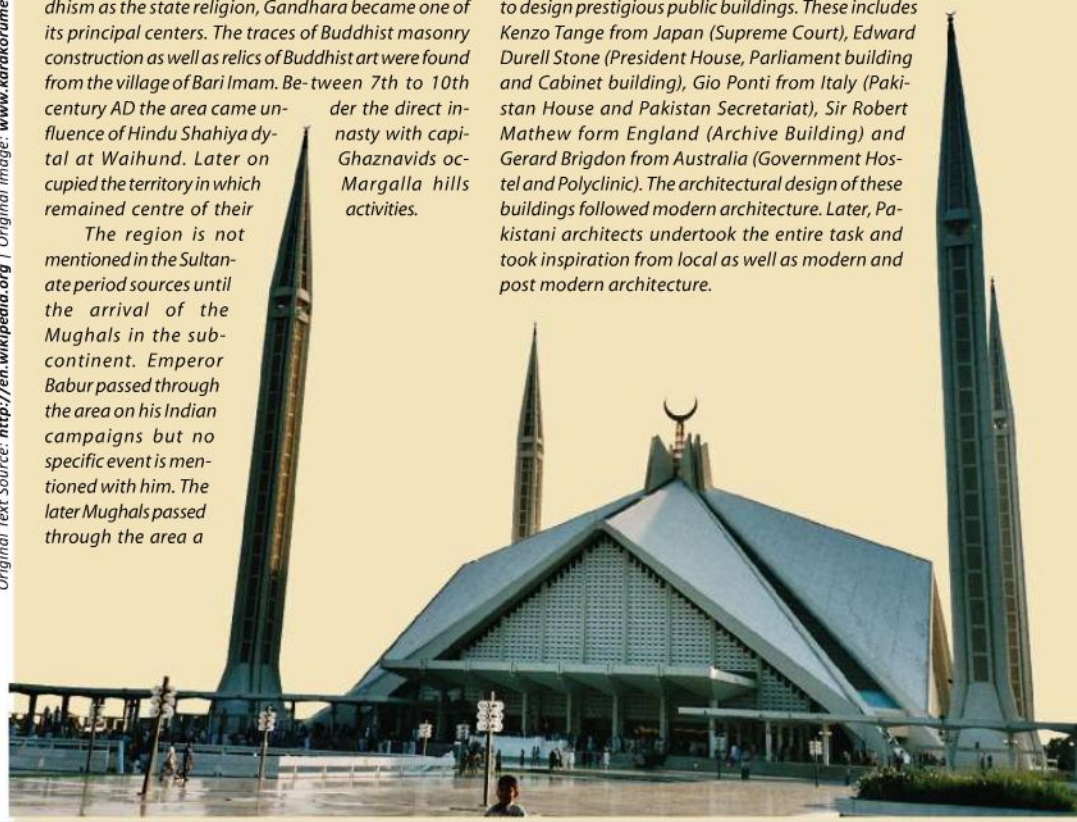
#### Recent History

Since its establishment, Islamabad has grown into 10th largest city of Pakistan by engulfing the city of Rawalpindi on three sides. It has attracted peoples from all over Pakistan as well as different parts of the world making it the most cosmopolitan city of the country. A number of universities are coming up giving it a flavor of administrative cum educational town.

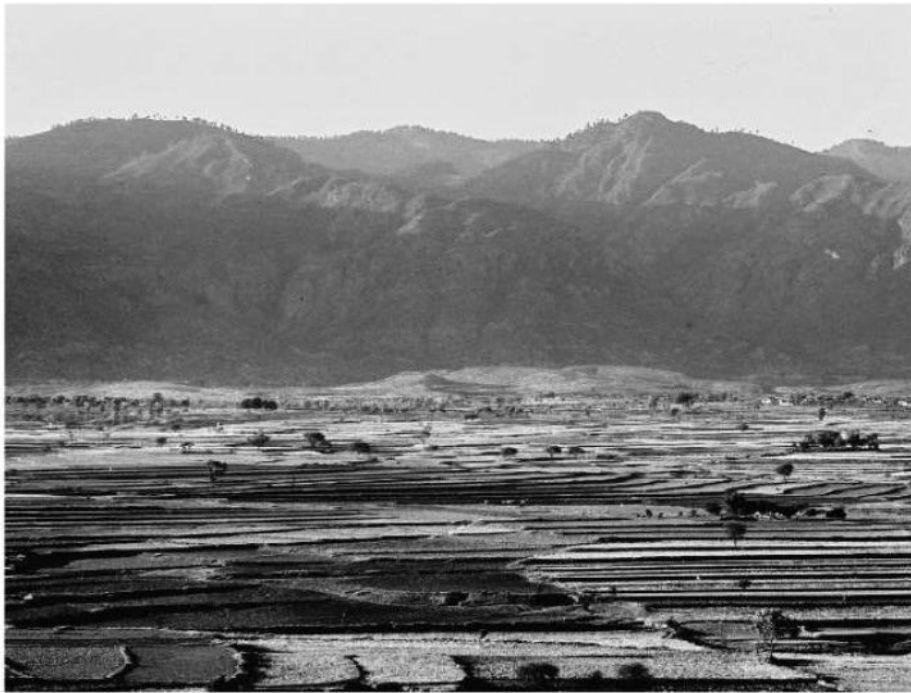
#### Architecture

Islamabad is among the few capitals of the world where large number of international architects were employed to design prestigious public buildings. These includes Kenzo Tange from Japan (Supreme Court), Edward Durell Stone (President House, Parliament building and Cabinet building), Gio Ponti from Italy (Pakistan House and Pakistan Secretariat), Sir Robert Mathew from England (Archive Building) and Gerard Brigdon from Australia (Government Hostel and Polyclinic). The architectural design of these buildings followed modern architecture. Later, Pakistani architects undertook the entire task and took inspiration from local as well as modern and post modern architecture.

Original Text Source: <http://en.wikipedia.org> | Original Image: [www.karakorumexplorers.com](http://www.karakorumexplorers.com)



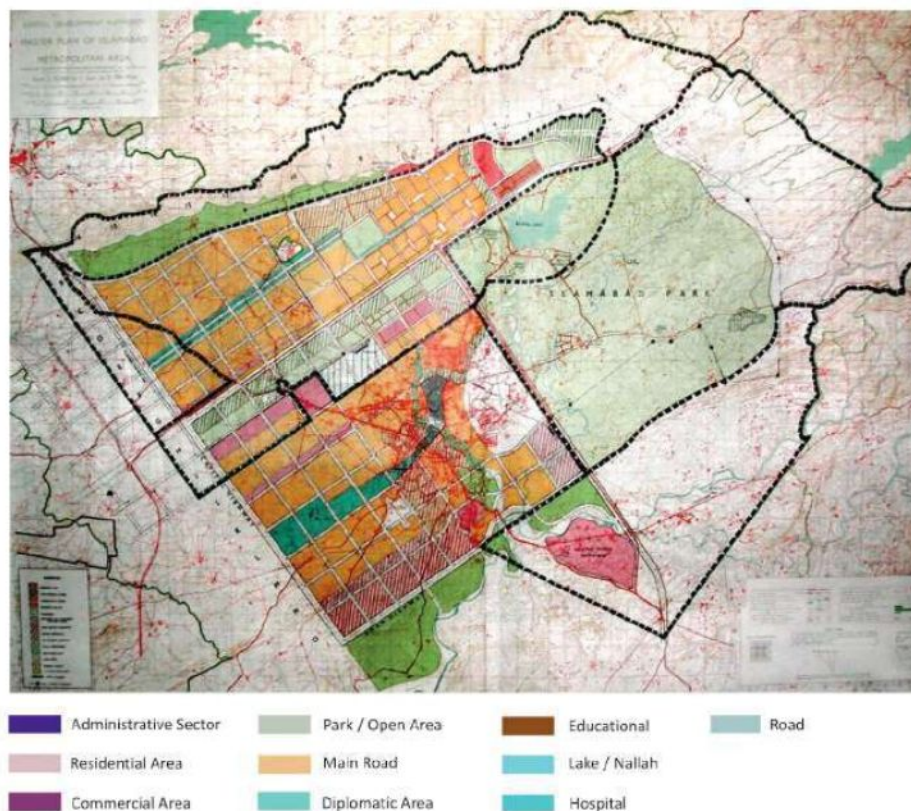




right from the inception and implementation of the master plan. The idea behind such expert services was that after the implementation of landscape plan and looking at the importance of landscape in an urban environment, that other cities would follow the same exercise. Derek Lovejoy and Associates of Britain was hired as landscape design consultant.<sup>2</sup> It was agreed that the consultants would train Pakistani landscape architects who would take the charge of landscape design after the expiry of the agreement. Two Pakistani landscape architects, Abdul Qadir Sheikh and Mustafa Kamal Pasha, trained from England and Turkey and already working in Lovejoy's London office relocated to Pakistan to assume major responsibility in the landscape design unit of the Capital Development Authority (CDA).

### Site and Landscape Considerations at the Master Plan Level

The site of Islamabad is located at the foot of the Margalla Hills. The site slopes from northeast to southwest along valleys formed by series of hillock running in the same direction. The site rises gradually from an elevation of 1,650 feet to 2,000 feet above sea level. The physical boundaries of metropolitan area are Margalla hills and Murree hills in the north and north east, the Korang and Soan rivers in the east and south east, while in the south and west existing natural features of no significant importance form the physical boundaries of the region. Through the valley enclosed by these hills passes Soan River and its tributaries, i.e., Kurang river, Gumrah Kas and Malal Kas etc. Other streams running through the sites are the Leh and Bhadarwali Kas. These streams culminate to form the river Soan which in turn flows to into the river Indus.



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TOP | *The site of Islamabad in 1959 before the start of construction*

ABOVE | *Islamabad Master Plan. Credit: Capital Development Authority CDA*

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*Landscape around Pakistan Secretariat with Margalla Hills in the backdrop*



northern part consists of hills covered by forests and deep ravines. The main physical feature of the area is the uneven terrain, eroded topsoil and twenty-one ravines carrying runoff and large quantities of debris from the surrounding hills of the lower Himalayas. The ravines are narrow and shallow at the upper end and become slightly wider and deeper towards the southwest. Since the rainfall of the area is regular, the ravines do not turn dry and during the monsoon season they fill up to their maximum width. The profiles of these ravines are extremely irregular. For example, the width varies from as little as 2 to 3 meters to as wide as 20 to 25 meters. The regular rainfall helps maintain a thick growth of native vegetation on both sides of ravines, sometimes as deep as 100 meters. The linear corridor of vegetation forms an ecological network giving another dimension to the natural landscape.

The site and climate studies conducted by Doxiadis Associates in collaboration with the Capital Development Authority established fundamental landscape policies. Four topographical groups for major landscape activities were identified.

The first one is the hills facing the south on an almost continuous rocky escarpment. The hillock rising 150 to 200 feet from the plain and softly rounded in outline dissect an intricate pattern of ravines.

The climate is a composite with a summer monsoon from July to September, bringing two-thirds of the annual rainfall. December to March is the winter season. The cold winds coming off the hills are the main characteristic of the winter months while dry dust storms off the plains are frequent in the months of May and June.

### Essential Environmental Phenomena

The physical mass of the Margalla Hills which acts as a protective barrier against the cold northern wind and causing the heaviest precipitation on the slopes in just those areas which are largely devoid of vegetation and, therefore, subject to the heaviest run off and erosion.

The ravines incised in the soft erosive soils of the plain and that are the most ecologically vulnerable.

The vast plain south of Islamabad with a thin stony soil cover, largely uncultivated and unprotected, subject to the intense heat of the summer and across which the prevailing winds blow.

With such environmental conditions Doxiadis Associates concluded that these extreme conditions could be ameliorated by the following actions – large scale afforestation of the Margalla Hills would reduce the run off from the slopes, lessen the erosion in the ravines and intercept the cold northern winds; the construction of permanent gully control structures with the breaking down of banks into acceptable gradients and the planting of bank holding vegetation would assist in stabilizing the ravines; and, the stabilizing of extensive shelterbelts in the South would act as filtering and cooling elements to the hot dry summer winds.<sup>3</sup>

These principles were accepted and implemented particularly in ravines where erosion was the most serious. In addition the master plan provided 60,000 acres of land southeast of Islamabad to serve as a green ‘baffle’ and provide insulation from this direction.





The landscape dimensions of the master plan are based upon two grids; i.e. the ecological grid and the ekistic grid. The right of way for future roads separates residential sectors at equal intervals with thick plantation at two kilometers apart. This ekistic landscape grid surrounds residential sectors with variety of plants. The continuous plantation along the alluvial soil of ravines, that cut through the city at regular intervals, forms the ecological grid. The ecological grid and the ekistic grid form the basic character of the urban landscape. Thus, the area available between the ecological grid and ekistic grid is available for residential communities.<sup>4</sup> The importance of green belt around the communities has been explained by Doxiadis as being "...necessary to surround the sector, the natural urban unit to which humanity is used, by a strip of open space. This we do in order to allow everybody to reach this open strip in the same amount of time as in the city of the past; keep a proper balance between open landscape and urban dimension; and, use these strips of land for proper plantations which contribute to the proper ventilation of the city and the proper balance of the elements leading to a better climate."

However, sub-communities within the same ekistic grid are sometime isolated from each other due to the natural vegetation along the ravine. In the detailed design of housing communities the natural landscape features have not been integrated together to create landscape and housing communities as one whole. The road cul-de-sacs end at the ravines, which act as a natural barrier within the communities. This situation may have been overcome by placing open spaces and street fronts on either side of the ravine rather than turning their backs to them. By linking both sides of the ravine with pedestrian bridges the maximum potential of the landscape could have been exploited to its full extent.

At the smaller landscape scale, policies were made and implemented to ameliorate the micro climatic conditions. Evergreen and deciduous trees were planted according to the plan requirements. In case of residences, deciduous trees were beneficial to allow the winter sun in. Water bodies' in the form of pools, canals and fountains were introduced where finances permitted. The Secretariat, Presidents House, the Government hostel and Pakistan Agricultural Research Council have been landscaped with such elements. In addition in the Administrative sector it was proposed to construct two lakes of about 20 acres, besides several other water bodies and a permanent irrigation system for the principal public spaces. In public housing, small flowering trees and climbers were planted to improve the environmental conditions and aesthetic quality of the landscape.<sup>5</sup>

Roads and paths across the city were planted with variety of trees and even then there are some difficulties being faced. For instance, footpaths 20 feet wide between houses are too wide to be entirely paved and too narrow for grass verges. In the recent years, these walkways have been asphalted leaving little opportunity to walk safely along them.

A specialized report by George Anagnostopolous for Doxiadis Associates, assisted by the horticultural staff of the CDA, in which the plant communities for each of the previously identified topographical groups were explored, provided a sound basis for the choice of species to be propagated and their distribution in large-scale compositions.

The four ecological categories may be summarized as:

1. The hills, originally forested and with stands of pure pine woods above 3,000 feet and remnants of scrub forest below

3,000 feet dominated by *Acacia modesta* and *Olea cuspidata* (olive), generally limestone soils, rocky and thin, steeply sloping to the southeast;

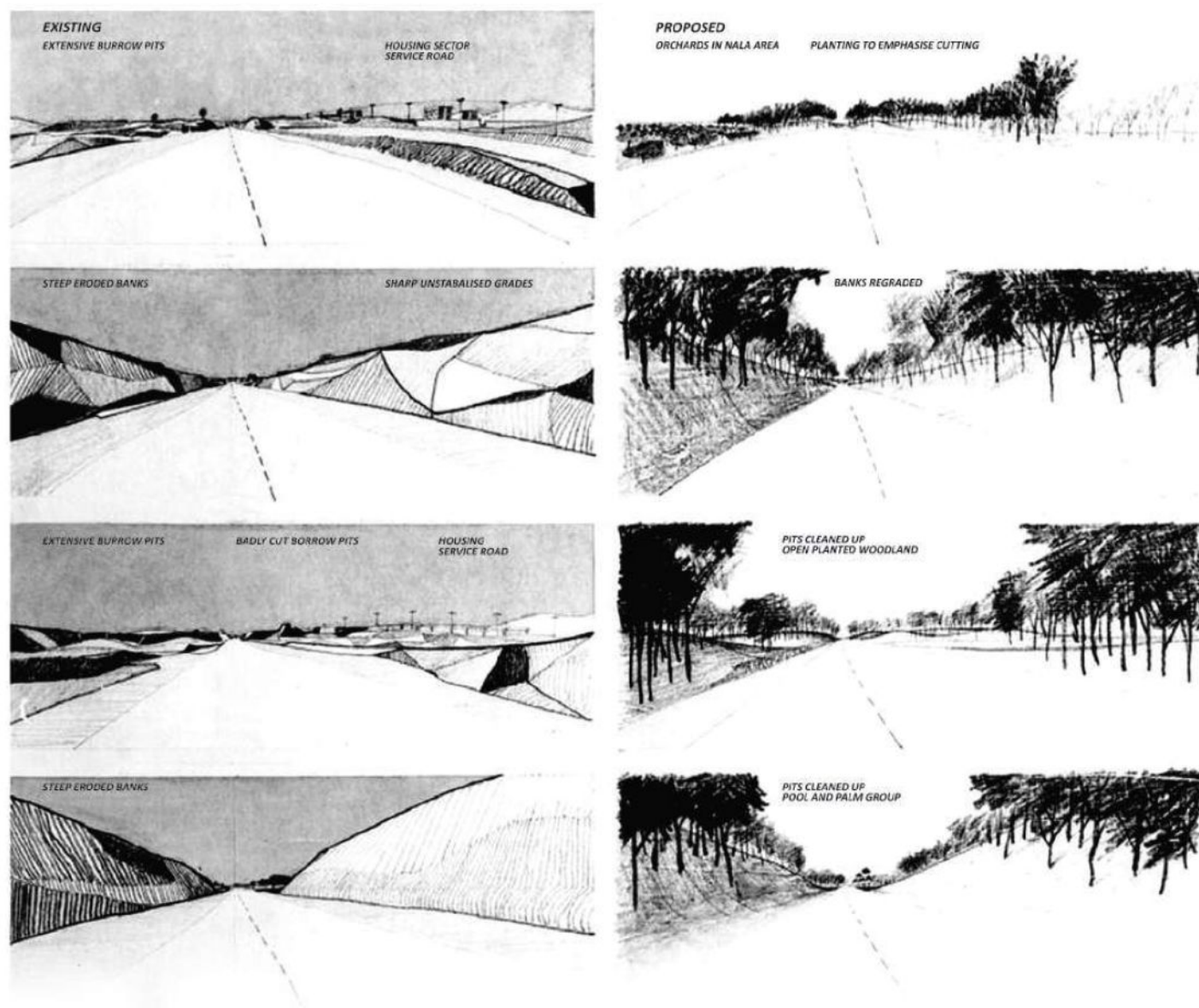
2. The hillocks with scattered trees and thorny bushes (mainly *Zizyphus jujuba*) continuing the scrub forest to the plains, generally sandstone soils, often stony and thin markedly undulating;

3. The plain, largely cleared for farming and grassland or uncultivated with patches of scrub forest (graveyards), orchards (loquat, guava, mango, and Citrus species), small tree groves around farm buildings (*Acacia modesta*, *Morus alba*, etc.), roadside planting (predominantly *Dalbergia sissoo* (shisham) the occasional *Ficus benghalensis* (banyan) with massive crown by village ponds, generally deep alluvial soils, slightly undulating with terraced fields inclined to the southeast broken by ravines.

4. The ravines, used for farming of grassland or uncultivated; scattered trees (invariably *Dalbergia sissoo* (shisham), which is naturalized in ravines), generally alluvial soils with much superficial stone debris, subject to floods and intensive erosion, with short steep and undercut banks.

This ecological grid has proved extremely helpful to landscape consultants in differentiating plant groups in their respective habitats and in establishing an overall consistency in the choice of species for planting. Through close observation of natural setting the selection becomes less arbitrary and begins to give expression to the range of growing conditions in a particular locality. The botanical idea of a plant as an "indicator" is thereby used as a positive design tool and the "structure of the landscape" begins to operate in much the same way as structure does for the architect as a vital conditioner and stimulant to the imagination.<sup>6</sup>





## Landscape Design in Practice

According to Lovejoy emphasis has been placed upon the analytical and deductive approach to landscape problems. But, in the last resort, landscape design (or architecture) remains an art and like the related skill of architecture; painting and sculpture, must be judged on this basis. The traditional landscapes that are widely admired include the pleasure grounds of the Mughals, the estates of 18th century England, and the temple gardens of Japan, which had transcended purely rational objectives for the realm of the senses and the spirit. These

“styles” were not strictly repeated at Islamabad, because they were the products of particular periods or places and a special flowering of the creative faculties in each case. They did inspire and act as catalyst in the search for an indigenous style for Pakistan in the 20th century - which uses predominantly native plant material and employ local skills and talents and can capture and embody the ideals of a young nation establishing itself in the modern world.

Landscape design was handled at three levels. At the city scale tree plantation was carried out on the hills in and around

Islamabad. A variety of trees were planted along the ravines, major roads and National Park area. One of the major landscape efforts was undertaken along the Islamabad Highway between Faizabad Chowk to Zero Point. The highway was designed within slopes made artificially with the help of soil collected from surrounding areas. The plantation was carried out on the basis of an undulating concept in which trees are alternately planted closer and then slightly

ABOVE  
Conceptual design / schematic view showing image of the highway



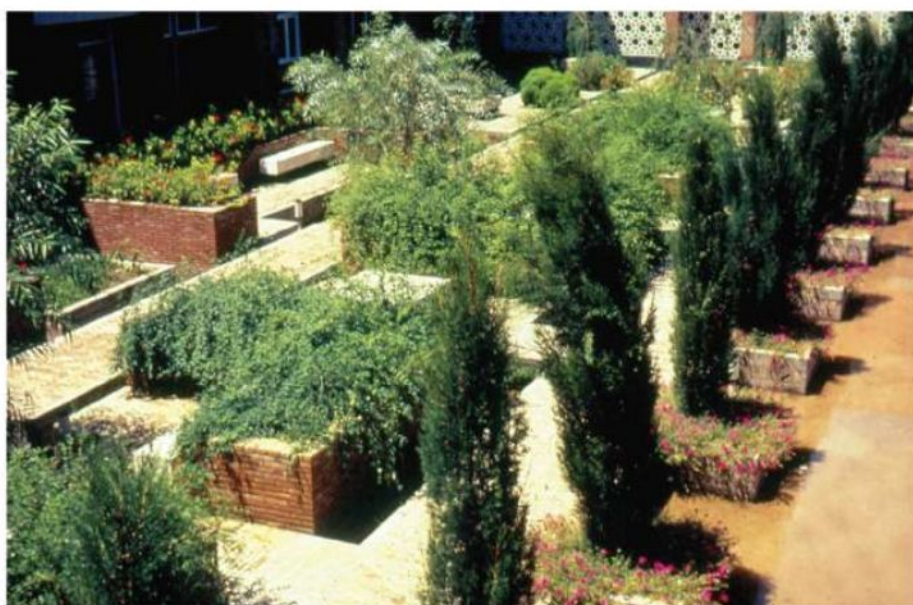
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BELOW | **Landscape design in secretariat complex inspired from Mughal design tradition.** Photo Credit: Aga Khan Program for Islamic Architecture at MIT

BOTTOM | **Hard and soft landscape of first courtyard of Government Hostel.** Photo Credit: Aga Khan Program for Islamic Architecture at MIT

## FACING PAGE

**Shakarparian Park lawn with trees planted by foreign dignitaries**



back from the highway. This method generates visual interest and breaks the monotony while traveling. The central medians were planted mainly with the yellow jasmine which creates a dramatic image in the landscape when in full blossom.

The plantation along the ravines did not prove to be a successful experience. The paper mulberry was planted on the large scale on the either bank of the ravines. This imported paper mulberry plant turned into weed and generates an allergy particularly during the spring seasons. Efforts are being made to eliminate the plants but CDA has not been successful to date. For outdoor recreation two projects were undertaken on the priority basis. The first was development of Shakarparian Hill Park and the development of Rose and Jasmine garden. These projects are separately discussed at the end of this article.

At the second level neighbourhood centers and small parks were landscaped. The centers of F-6, G-6 and G-7 neighbourhoods were landscaped using both hard and soft landscape techniques. Car parking was designed against planters in the middle of two opposing parked vehicles. Sunken courts with brick lined planters and sitting spaces were hallmark of such areas. These shopping centers are landscaped. Shrubs have been introduced to avoid monotony. The central courtyard has been nicely landscaped with raised planter. The wall has shops facing inwards and is faced with brickwork. In such planters flowering plants are grown to give color and order to the environment. The most important example of park design was Argentina Park. It consisted of series of terraces designed following the site contours. Benches were designed to allow people to watch the outdoor activities of others in the urban environment.



The provisions of public open space were ensured at all levels. This design feature provided equal access to everyone towards landscaped spaces. Each class I house has its own garden; the class II house groups have small sitting areas linked by footpaths; the class III house groups have small paved “squares” with garden and play ground for primary schools, the class IV sub-sector has shopping esplanades, neighborhood parks, and running tracks for the secondary schools, and the class V sector incorporates a whole complex of civic spaces, approached by pedestrian green-ways, and is served by parks and playing fields associated with the ravines and water courses of the larger landscape.

At site scale detailed landscape designs were prepared for important public building projects. The Pakistan Secretariat, Government hostel and Quaid-e-Azam University are most outstanding examples. The landscape designs of the first two projects were particularly inspired by Mughal landscape architecture. At the Government hostel, planters of different heights and sizes have been used, with benches placed along the *khyaan* – the promenade – with water channels on its either side.

The landscape design of Block A to D of the Pakistan Secretariat buildings is the most outstanding. The architect Gio Ponti and landscape architect worked closely to give this project a strong visual character. The composition of building blocks of varying heights designed to suit the topography and equally successful landscaping made it one of the best architectural projects in Islamabad. Based upon the Mughal tradition the contours have been successfully used to create canals cascades and fountains along the brick paved *khyaans*. These Mughal landscape features are planned within the modern office building complex and blend within the environment. The land-

scape design gradually unfolds as one moves from lowest level to the highest level. This landscape feature has been created at the rear of the office buildings, which are connected with pedestrian *khyaans* while a long sloping driveway for cars is designed to join the main entrances on its northwestern side. Water channels in the middle of paved walks, cascades and fountains are the main feature of the landscape design.

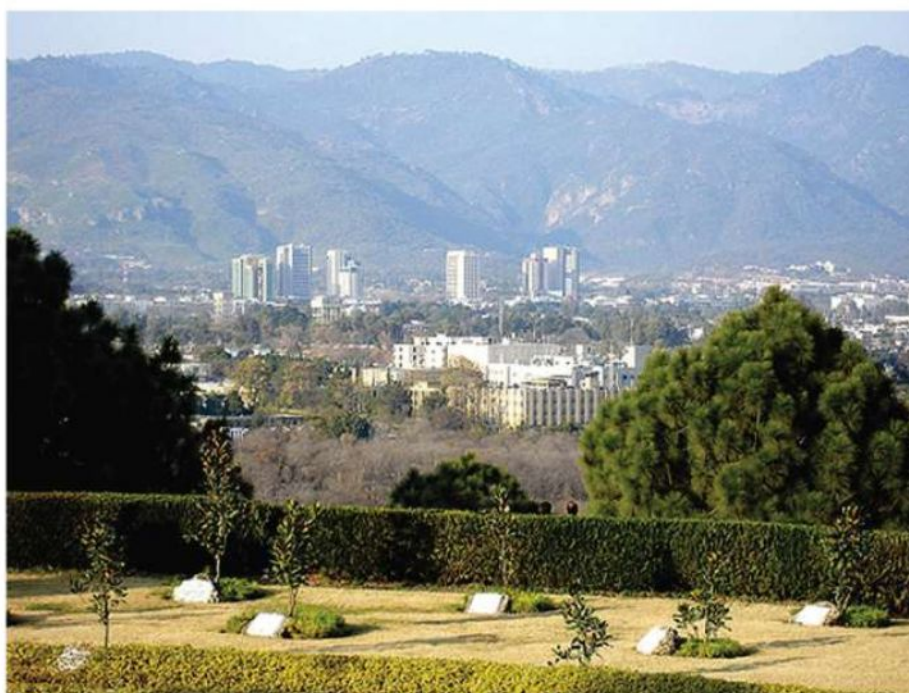
The car parking is planned ten feet below the road level in the first four blocks of secretariat complex and obscured behind the artificial mound in block X to Z, another good example of maintaining the visual quality of the natural environment.

### Shakarparian Hill Park

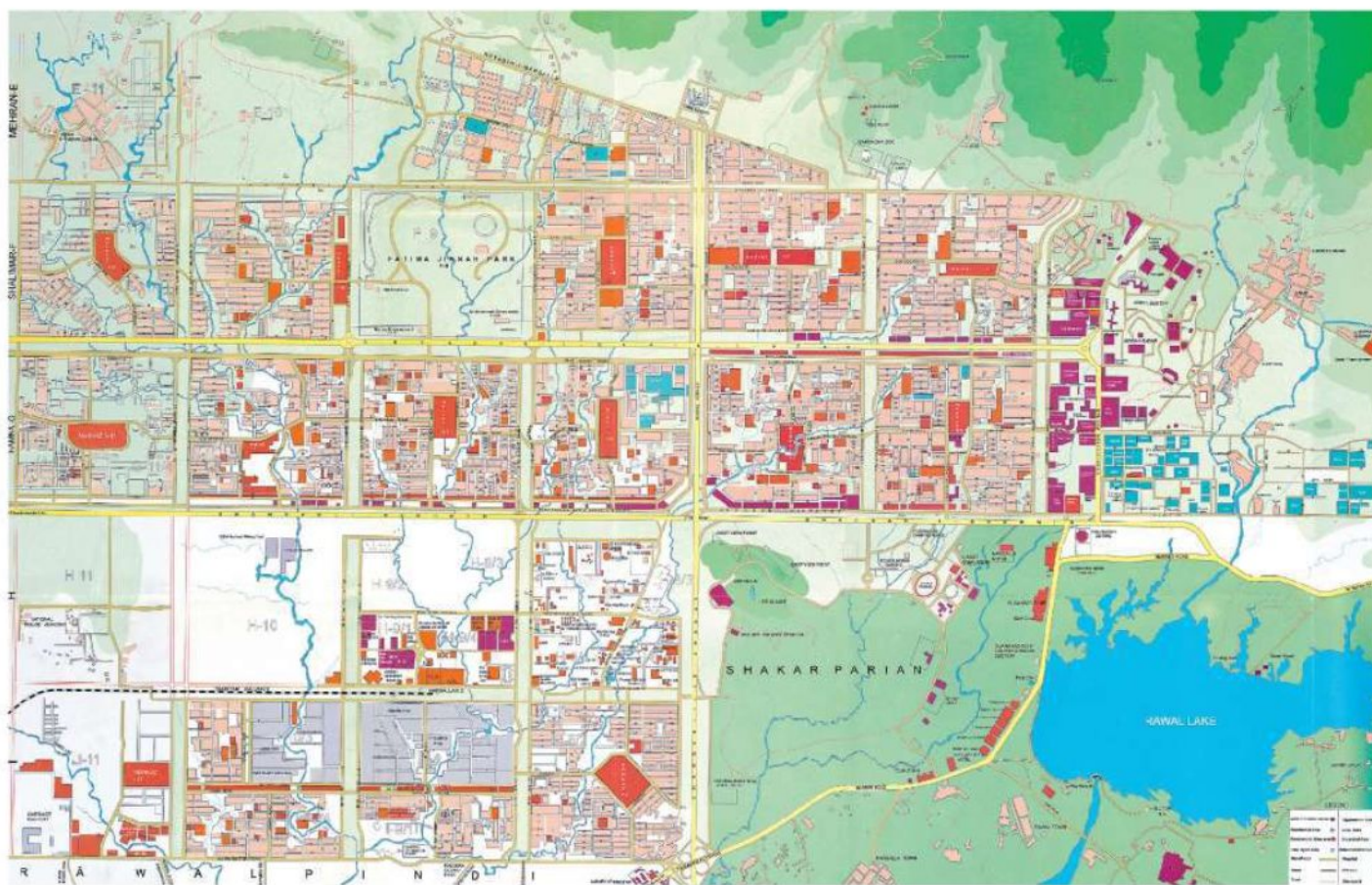
Shakarparian Hill Park near zero point was one of the earliest landscape contributions in Islamabad undertaken by the CDA. Prof. Kando of Japan designed this project. Shakarparian Hill comprised of two peaks known as east viewpoint and west viewpoint. A metaled road connects the parking areas of the two. At the same

time a trail from zero point and a metaled road originating from the Murree road and Shahrae Faisal join the ridge in the middle of the two high points. At the west viewpoint, the construction of the National Monument is in progress.

The garden on the east view point consists of a series of landscape spaces with lush green lawns surrounded by walkways and steel fences and hedges. The fences and hedges sometimes surround the lawn together to avoid trespassing. The lawns are designed respecting the topography of the site. Steps and ramps link different areas located within the park. Close to the parking areas and lower portions of the hill lies a play area for children. A few electrically powered rides hidden within the trees provide entertainment for children. The first lawn on the northwest side has historical dimension. At this location the first cabinet meeting was held to approve the master plan of Islamabad. A monument has been constructed to mark the historic moment. Another linear lawn on the south east side runs along east west axis. The central walkway continues towards







south east. This pathway ends at highest point where a fountain has been constructed. The umbrella like fountain is a focal point and an important vista while arriving from either direction. A few more steps towards the east lies the highest terrace. A map of Islamabad has been laid out on the floor surrounded by undulating hedges representing the hills surrounding the city. A circular garden surrounds this layout. Foreign heads of states and dignitaries visiting Islamabad plant a sapling in this garden. The most common trees planted are *Pinus roxburghii*, *Araucaria excelsa*, *Araucaria cooki*, and *Magnolia grandiflora*. The garden is dotted with *Olea europaea*, *Sapium sabiferum* (Chinese yellow tree), *Platanus orientalis*, *Cedrus deodara* and *Prunus subhirtella*.

To the south west of this garden, a structure supported on RCC columns has been

constructed. The townscape of Islamabad can be viewed from its roof. The shelter rests over a garden at the lower level and access to the deck has been provided from walkway surrounding the circular garden. The lower level lawn covers the entire eastern edge of the hill. This garden is an important attraction to view the landscape of Islamabad both day and night. People from all walks of life like to spend some time in leisurely pursuits and enjoy the cool breeze of late evening at the park. The park is planted with a variety of seasonal flowering plants which enrich the landscape along with variety of shrubs and trees.

### Argentina Park

The park is symmetrical in plan with a series of lawns located at various levels. As one approaches the garden from post

office side eight steps that flank either side of a rectangular planter descend to a rectangular garden. A light tower in the planter illuminates both steps and flanking lawns. A central passage continues towards southwest between retaining walls of lawns at higher levels. The lawns on either side have Jasmine plants which grow over the retaining walls. Beyond this passage another terrace paved with cement concrete floor is furnished with a number of landscape elements. Two fountains on the either side of the central axis are a welcome respite to the hot dry weather of the summer. To approach this sunken terrace a number of steps have been provided on three sides whereas one fourth side it is connected with central passage. The most common flowering plant in the garden is yellow jasmine which flowers during the month of April.



On the northwestern side, lanterns have been constructed recently to make the space lively at night. Due to its location near a polyclinic the visiting families of patients coming from far-flung areas frequently use the park. The park is centrally located between a neighborhood center and the 'blue area' – the commercial and business hub of the city.

## Rose and Jasmine Garden

The Rose and Jasmine Garden is located in the National Park area adjacent to the sports complex near Aabpara market. The garden is accessed from Shahrah-e-Kashmir. A large car park flanks the garden on the either side of the access road. At present, over 250 varieties of roses and dozens of Jasmine are displayed in the garden which is spread over an area of about two hectares.

On the western side, amenities have been provided for the convenience of visitors, which include rest rooms and CDA offices. This area is landscaped with *Cassia fistula* and Bougainvillea. On the eastern side of the road, a camping ground allows tourists to park their vehicles near their camps and walk around Islamabad. A short distance away from these facilities, on southeast side, lies the actual garden. The garden consists of two concentric circles joined each other with radial walkways. A fountain with a series of jets has been built in the western side of inner circle and a deck for performers on the eastern side of circle. The deck has been constructed to organize musical performances on important occasions. Varieties of roses and jasmine plants are being planted between the inner and outer circle. A water channel has

been designed which takes the form of lake in the south eastern corner of the garden. In the southern side active recreational facilities have been provided for children. On the north eastern side of the garden a wooden pergola is an extension of the circular garden and provides shelter for visitors. Beside the display of variety of rose and jasmine, other plants have been planted in group form, including *Hibiscus rosa*, *Jacaranda mimosaefolia*, *Taberna Montana coronaria*, *Gardenia florida*, *Cassia fistula*, Bougainvillea species, *Murraya exotica*, and *Lagerstroemia indica*.

Each quadrant of the garden has visual interest in the form of a kiosk, sculpture or simply a sitting platform. The garden is adequately furnished with street furniture such as benches, drinking fountains, and dustbins. Concealed lighting at a level of three feet along the foot paths enlivens the garden at night.

## Conclusion

Although consultant landscape architects followed a strict design theme inspired from Mughal landscape architecture and combined it with modern British design tradition in the design of earliest projects – such idea could not continue in the later periods except Sind House and Pakistan Agricultural Research Council projects. Islamabad is an excellent site where the relationship of water and landscape could have been strengthened by taking water from natural streams and bringing them in landscape projects. The potential of these streams, however, have not been tapped effectively. The concept of water harvesting is non-existent. Using an environmental design approach the rain-water run off from Margalla Hills must be tapped, stored and used in hot dry season to achieve visual pleasure in addition to the amelioration of microclimatic conditions.



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**Dr Abdul Rehman** teaches at the Department of Architecture, University of Engineering & Technology, Lahore, Pakistan. He can be reached at [arch.rehman@yahoo.com](mailto:arch.rehman@yahoo.com)

All images | drawings courtesy the author.

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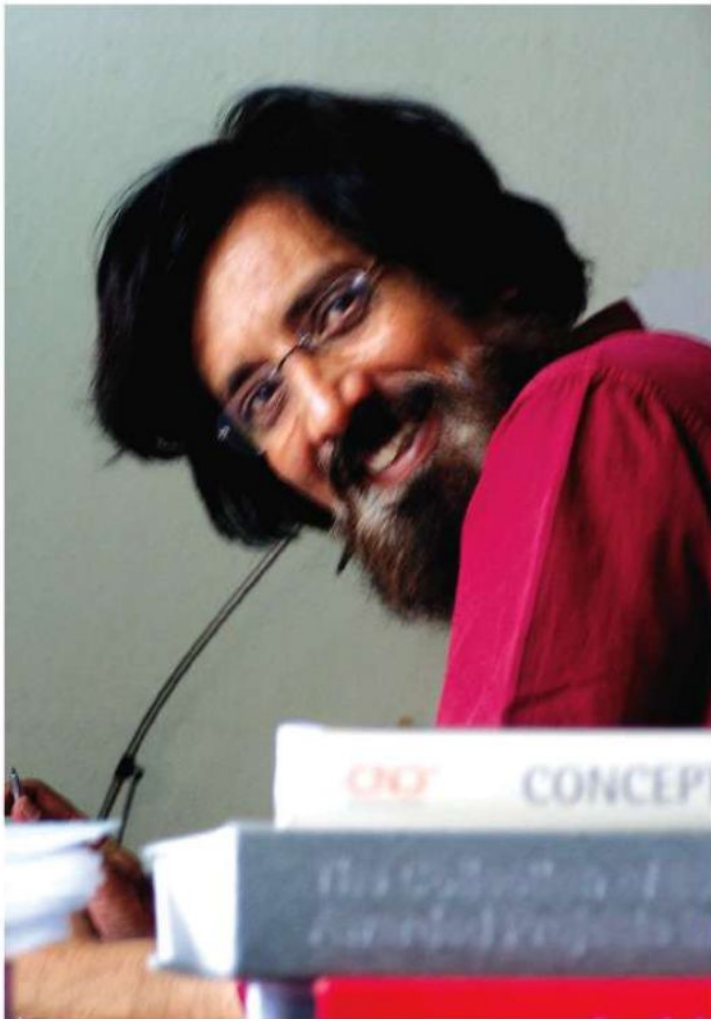
**Map of Islamabad**

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**The Rose and Jasmine Garden**



IN CONVERSATION WITH  
**SANJAY  
MOHE**

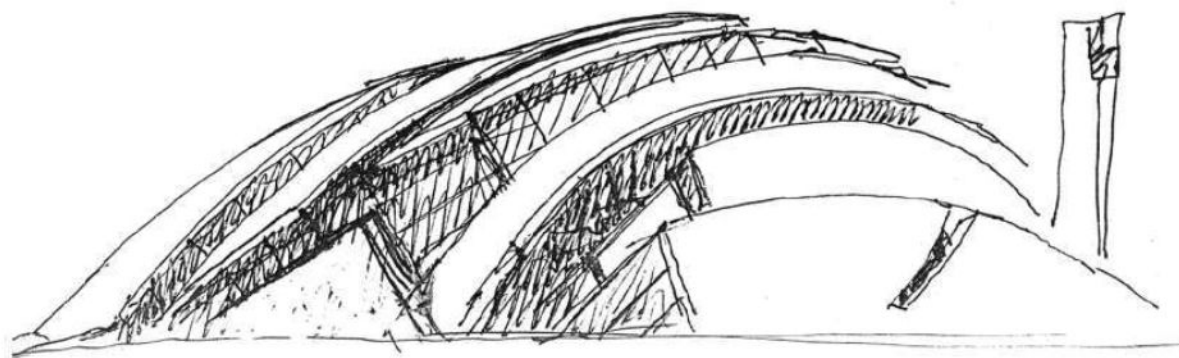


Simple, not simplistic... Modest, not monumental – is how Sanjay Mohe's and his Bangalore-based firm Mindspace's works can be described. With the philosophy of 'participating, understanding and working with nature, respecting the five senses, and working with the five elements',

Mohe 'represents the architectural ethos of Bangalore that mediates between a modulated Modernism and the contingencies of the city's specificities...' <sup>1</sup>

<sup>1</sup> Architectural Design, Online Edition, Nov. 2007





**I** was born and brought up in Mumbai. As a child I looked up to my eldest cousin who had returned from the UK after completing his RIBA. An impressionable five year old, I was influenced by his personality. I used to sketch well as a child, so everyone decided that I should grow up and be an architect like my cousin and the journey began...

I graduated from Sir JJ College of Architecture in 1976, worked from 1977 to 2004 in Saudi Arabia, Mumbai and Bangalore until Mindspace was formed in 2004.

As a design professional, what are the major influences and inspirations in your life that have shaped your design philosophy and its understanding?

Coming from a middle-class background, I have always believed in simplicity, specifically the Gandhian simplicity. The process of achieving this simplicity is most complex. Hence, the works of Tadao Ando and Richard Meier were really inspiring. We learnt a great deal from Charles Correa, B V Doshi and Geoffrey Bawa. We learnt the art of building in our tropical climate; of introducing porosity in closed boxes; of getting the air to circulate and light to modulate

in the built spaces. We learnt to recognize and treasure the skill with which they handled the transition from outdoors to indoors blurring the boundaries where one ends and other begins. We looked at climate as the main influencing factor on life style – our culture, behaviour, eating habits, fashion and, most importantly, architecture. Hence, the central idea of our architecture lies in its response to climate and context. Thus, the ‘experience’ takes precedence over ‘form’, and ‘soul’ over ‘skin’.

One of the abstracts about your Bangalore works in a book mentions that your work ‘represents the architectural ethos of Bangalore that mediates between a modulated Modernism and the contingencies of the city’s specificities’. How difficult it is to achieve the balance?

Modernism gave us some fundamental guiding principles. Correa and Doshi had already imparted an Indian dimension to International Modernism. For us to continue working in that direction was not difficult. Our challenge is to achieve a balance between the Indian ethos of ‘order in chaos’ and the Western one of absolute ‘systematism’. Being in Bangalore affords us an outlook contemporaneous with important developments globally.

In spatial designs of present times, how meaningful is it to adopt traditional or vernacular approaches when we are surrounded by a fast changing world with new and complex problems whose solutions may not be found in past practice, or traditional modes of thought?

A P Kanvinde used to say – ‘compliment the past but contribute to the future’. When we look at traditional or vernacular approaches, the idea is not to copy elements but to imbibe the spirit and principles. This study informs our solutions to present day challenges which are achieved by means of cutting edge technology and materials.

How important are the issues like climate, region and culture in spatial designs?

Indian culture is multi-hued and vibrant. Our market places, *bazaars*, streets and train stations come across as chaos to an outsider but, in reality, are in perfect order to an insider, and hence, the phrase used earlier ‘order in chaos’. Western concepts of minimalism and rationalism are based on the process of elimination. We, in India, thrive on the concept of absorption – absorption of various cultures, people and memories. Consequently, our architecture is an expression of these sensibilities.



Five elements of nature, the *pancha bhutas* represent climate. Our five senses represent our perception – ‘feel’. A building always begins as an idea that becomes real as it gets translated into spaces, forms & materials and built upon the functional structure of planning. This involves a process of understanding the forces of nature, trying to use their energy to create a healthy and energy efficient environment where the five elements (sun, earth, air, water and sky) become an integral part of the built, breathing life into them. The skill lies in

allowing the right amount of light, air, vegetation, water into a specific space to generate the required ‘feel’ using appropriate technology.

**Tell us about your association with Chandavarkar and Thacker – the firm with which you were associated for fifteen years.**

I came to Bangalore in 1983 to pursue my dream. I met two extraordinary people Mr. Thacker and Mrs. Chandavarkar who taught us ethics and values of a true pro-

fessional. The office was like a family. Today, at Mindspace, we try and follow the principles that we learned from them. At our office, we like to work hard and party hard too! The underlying idea is to do good architecture and enjoy the process of doing it.

## SUSTAINABILITY

### TERI-SAS DELHI

This campus is located at Vasant Kunj in South Delhi. Passive solar design is an important feature in the design of this building. The planning and orientation of spaces and building blocks ensures glare-free daylight in all regularly occupied spaces.

The central atrium is proposed to be covered with an automatic adjustable louver system. The louvers can be adjusted to block the solar radiations during summer and to allow ample sunlight during winter. The system is further integrated with photovoltaic panels.

The predominant wind direction is taken into account while designing the open spaces. The central space is designed as a wind tunnel to create the Venturi effect – essentially looking at design in volumes, with wind being forced to move into a narrow opening and expanding into a larger volume. This design strategy creates wind tunnels and makes the central atrium area always cooler than the surrounding exterior. This campus is equipped with earth air tunnels and thermal mass storage to minimize energy consumption. Best practices in green building that are followed globally have been incorporated in the design of this campus.



ABOVE | TERI-SAS, New Delhi



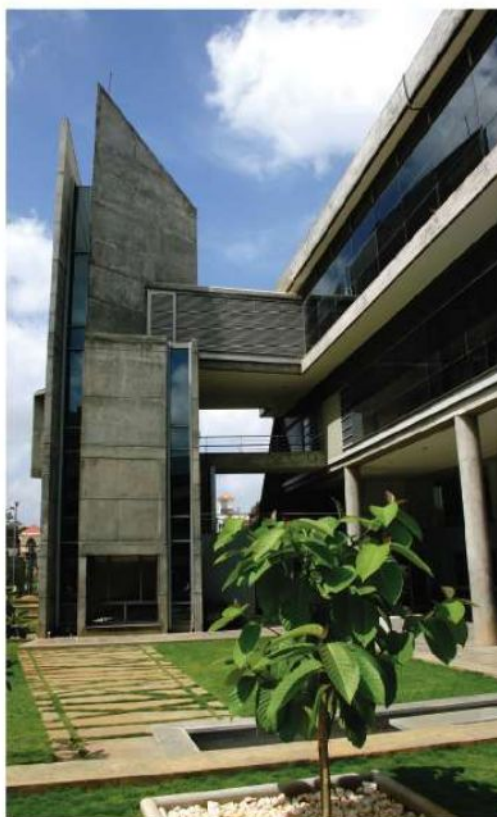
Sustainability is not one of the imperatives of the rapid urbanization in India in the real sense. Whatever little has been in practice regarding sustainability, design techniques, energy sustainable materials etc. are not able to match the scale and pace of new developments. Moreover, there are very few such resources and services available in the open market to achieve this.

There has been substantial awareness of this subject. In fact, the 'GREEN' word has been used so extensively that it is losing its importance. But unfortunately, the ground realities are different. Very little of it has been practiced. It calls for a change in attitudes. The very definitions of necessity and luxury are changing. The bicycle was a luxury once upon a time – now an air-conditioned car is. This is affecting the entire system. Escalators, travelators, high pressure showers, and electronic gadgets are all adding up to enormous power and water consumption.

All the developed countries are discouraging people from bringing cars into cities, where as we are adding a huge amount of cars everyday on our roads. Efficient public transport is most vital to reduce this. Luckily in our country, a lot of waste gets recycled (through rag pickers), but lot more research needs to be carried out towards developing eco-friendly materials on a larger scale.

Our urban areas are blindly following the western language of office building. First creating a glass box, then closing it with curtains and blinds to avoid glare on the computer monitors, then switching on all the lights and pumping more energy for air conditioning to reduce heat-gain through the glass! This is a criminal waste of resources. If we try and develop a built form appropriate and responsive to local climatic zones, we will be able to use the available resources efficiently.

## indian architecture is an expression of the concept of absorption of various cultures, people and memories



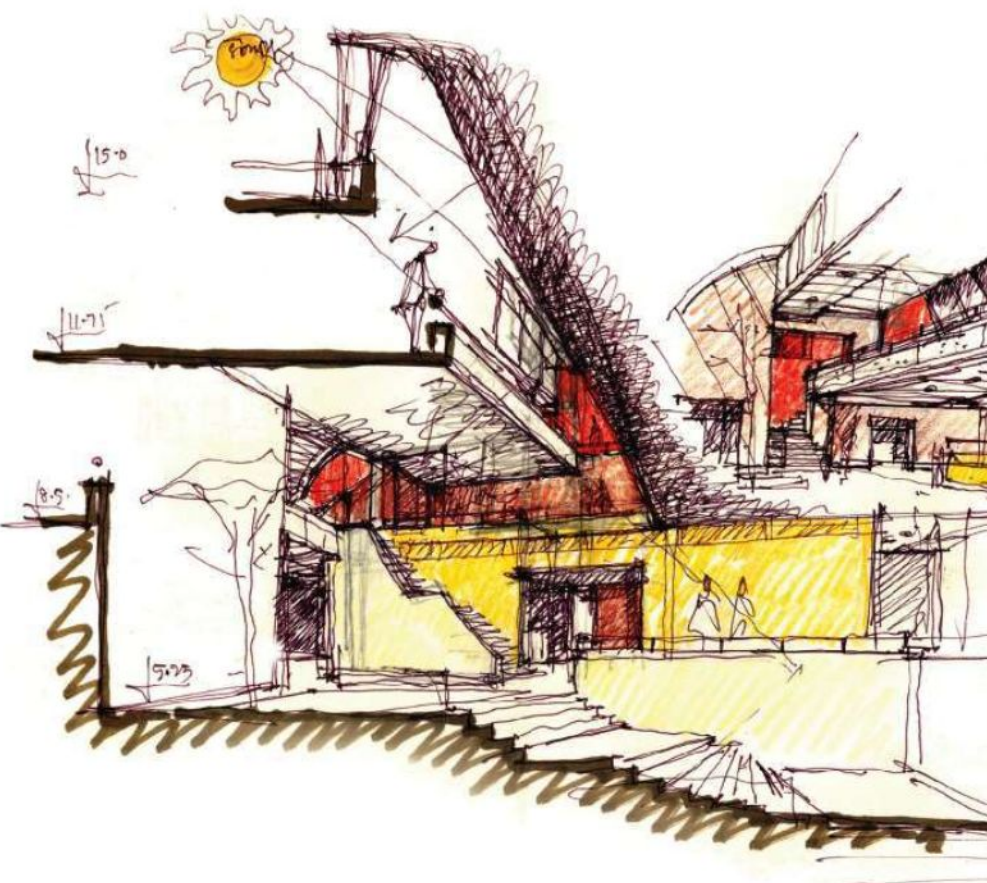
**LEFT | BRBNML, Bangalore.** This building is distinguished with its tapered overlapping concrete walls. The southern side of the building opens out to a courtyard with a tower balancing the entire form.



**RIGHT | NSR-GIV Centre, IIM, Bangalore** has angular slabs of concrete held by the grey granite walls in a rhythmic composition with dark tinted glass on the northern side. The building is designed to reflect the ambitions of the individuals and at the same time to stand as a sign of reverence to masters work in a modest scale.



# the central idea of our architecture lies in its response to climate & context...



One has to conceive the idea of going green right from the beginning. The concepts for the same have to be followed at every step starting from the selection of site, to the entire design development process. The 'green' concept has to be conceived in totality – not as an add-on feature. The primary aim is to keep the air-conditioned spaces to a minimum and to reduce its load using all the above elements in designing energy efficient spaces. This process does not involve any additional cost as one is being sensitive to the elements of nature and trying to make use of them through efficient designs.

**What are your views about various rating systems in India?**

Rating systems have definitely created awareness. The disadvantage of a rating system is that it is more of a measurement tool than a design tool, a fact which is often overlooked.

## PRACTICE

**What are the positive trends that you see in contemporary developments in architecture in the country?**

I can talk more about Bangalore, where the architectural fraternity has always appreciated and encouraged fellow architects. There has been a lot of interaction, seminars etc. Probably as a result of this, one finds a lot of young practices doing extremely good work. This sets in a kind of chain reaction and starts spreading from architecture to other professions, setting up standards and raising the bar.

Another big change is the international exposure one gets through media and through travel. In fact, what one often hears is the request to have 'a world-class building'. Of course, this change in attitude is motivating architects to produce better quality of work.



What are the areas of concern that you visualize in contemporary architecture?

Right now, the immediate threat that all of us are facing is 'Vastu'. This has caught up like pandemic and the media is propagating it.

Do you think design professionals have a role to play in bridging the ever increasing social and economic disparity between masses, especially in the Third-World countries?

Unfortunately, as an architect, you cannot do much about it because the problem is much more complex than it seems. Through urban planning and community housing, one can try to bridge this gap more at a social level. One has to abolish the gated community system, which shuts doors to the reality of life. This is creating disparity to a certain level in the society.

In today's builder-driven developments, very few professionals are working in public domain...

Due to the competition in the market, there has been a lot of change towards the attitude of the developers. There is a demand for a good product and this competition is encouraging creative architectural work.

Tell us about one of your most satisfying professional projects.

One begins to realize that it is not just the immediate reaction to architecture but the manner in which the built-form ages, is actually important. When you see your work over the years and it is aging gracefully with people bringing vibrancy, spirit to the place – where a 'space' becomes a 'place', it is really satisfying.

...with the 'experience' taking precedence over 'form', and 'soul' over 'skin'

I still remember the tension and excitement of experiencing my first design getting built, a small hostel block in the Indian Institute of Science IISC. I still recall the first slab being de-shuttered, the first load bearing walls being built, climbing onto the first staircase I designed... This is the most memorable part of the entire architectural process. I hope the same tension and excitement stays with me for every new project I work!

## LANDSCAPE DESIGN

You have said that as an architect, you view architecture in totality, move beyond resolving functional aspects and look at several aspects – light, air, water, earth, nature, climate, technology, the client's aspirations – from several different points of view at the same time and try to create a happy place.

What role of a landscape professional do you see in creating this 'happy place'?

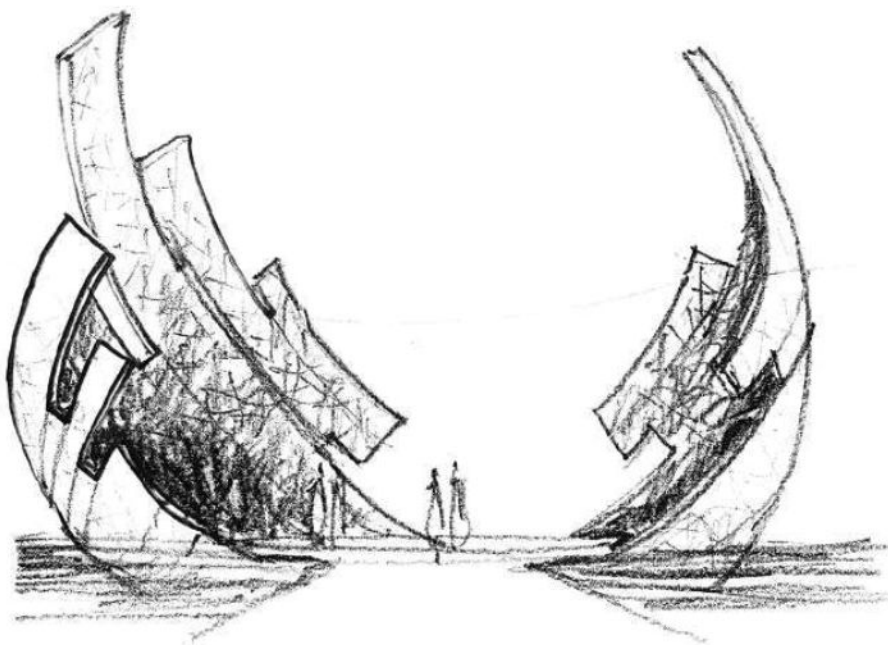
Our attempt in every work is to integrate nature into the built form as our climate allows us to do that, to blur the gap between outdoor and indoor and to achieve this, having close interaction with the landscape architects from the initial stage becomes quite crucial. We always like nature to take over and absorb the architectural space within.



ABOVE | **Karunashraya, Bangalore.** *Tranquillity and stillness dominate the space which addresses the needs of terminally ill patients.*

BELOW | **Dr Reddy's Residence Hall, Bangalore** *is designed to establish connectivity between a rocky hillock and a playground where rocks get integrated into the built space. Decks, water bodies further enliven the environment.*





Any examples of landscapes from past and present that have inspired you...

Lunuganga in Sri Lanka by Geoffrey Bawa is one work that has inspired me the most.

## EDUCATION

You have also been delivering guest lectures in various architectural schools. What do you feel about architecture education in India and do you think there is a gap between education and professional practice?

It is difficult to generalize. There are good schools and bad schools. What matters is the attitude of the students and you realize that the architects who are presently doing good work in India are not from one particular college but from all over.

There is certainly a big gap between education and profession but our experience with trainees and fresh architects is that if they have commitment, their learning curve is very steep.

## CURRENT PROJECTS

**Engineering College for G.Narayana Trust at Trichy** – New college in Trichy covering a total area of 2,40,000 sqft on an 70 acre plot which would eventually have medical college, housing, hostel etc. This building overlooks a vast water body and the building is designed around courtyards and corridors overlooking water body. Climatic conditions at Trichy plays a vital part in the design of this building.

**School for G. Narayana Trust at Trichy** – Located in the same plot with similar design intent, but has its own identity. Low-rise structure with landscape extending from inside the school to the water body.

**Jawaharlal Nehru Centre for Advanced Scientific Research, Jakkur** – Various buildings to accommodate all research functions with hostels, faculty housing, guest houses etc.

**Sreenidhi International School at Hyderabad** – This school is built on a 40 acre land covering a total of 2,20,000 sqft with all facility matching international standards.

**Indian Institute of Management, Bangalore** – Mindspace has been working on various buildings for the past seven years and is currently building 300 room hostel, 24 faculty houses and a large class room complex with all modern facility to match international method of teaching.

**Projects in Bangalore and Pune for Rohan Developers** – Various housing projects with one large mixed use project covering a total of 24 lakh sft which would be built over a period of five years.

**Exclusive Villa for Legend Estates at Hyderabad** – 300 exclusive villas in community which is scheduled to be completed in three years.

**Club house at Bangalore Golf Club** – 90,000 sft club house located at middle of Golf course at Bangalore. This building has been planned over an existing sewerage treatment plant which is located at the centre of course offering fantastic view all around.

**Labs for Alexandria** – Hyderabad. Labs of 3.9 lakh sft located on a 12 acre plot of rocky terrain in Hyderabad.

**TERI Bangalore** – Various smaller expansion work.

**CMR School** – Boutique School in Bangalore.

**Soma Developers** – Corporate Office in Bangalore.

Sanjay Mohe can be reached at [info@mindspacearchitects.com](mailto:info@mindspacearchitects.com)

Website: [www.mindspacearchitects.com](http://www.mindspacearchitects.com)

All images | sketches courtesy Sanjay Mohe





# COMMONWEALTH GAMES 2010

3 - 14 October 2010

The biggest sports event in Delhi (after Asiad '82) – the Commonwealth Games 2010 is going to take place in the month of October. Featuring 17 sports and with the participation of almost 7,500 athletes and players from over 70 countries, more than 10 million tourists and visitors are expected to arrive in the city from all over the world.

The event, which is scheduled for twelve days, has initiated series of urban development works in the capital city of Delhi including upgradation of city infrastructure, new transportation corridors including Delhi Metro Rail Network, streetscaping works of main roads, redevelopment of stadiums and sports facilities, housings for the visitors and the players among others.

From this issue, we are starting a series about various aspects of these main urban development works, especially those related to landscape design.

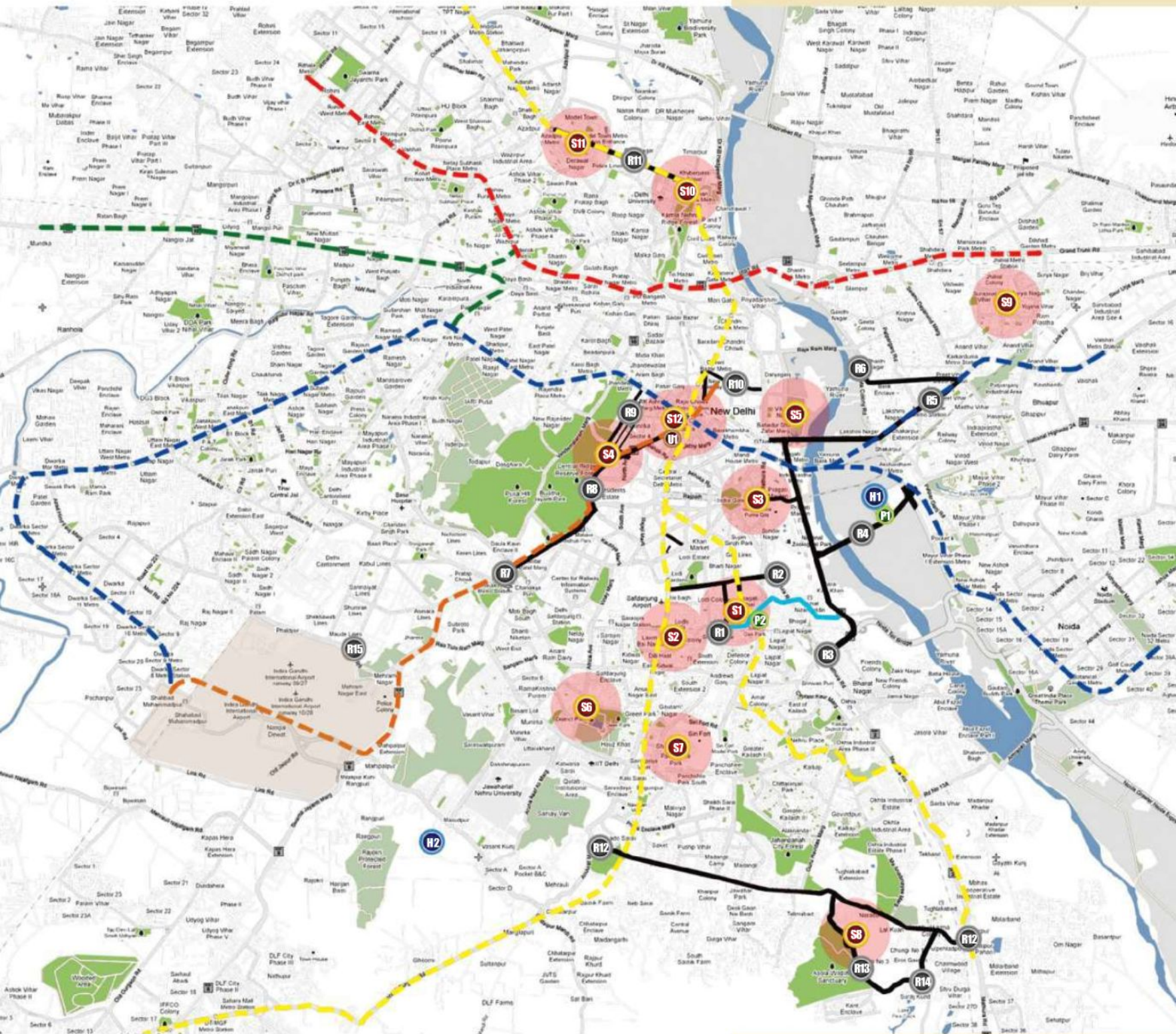


## PART 1

### LISTING OF WORKS

ABOVE | Rendered image of the proposed Commonwealth Village, Delhi





**NEW DELHI – Map showing locations of major urban development works being carried out for Commonwealth games 2010**

Map by: Sumit Arora | grafiniti





## NEW DELHI MAP LEGEND

Stadiums | Training Venues |  
Main Roads taken up for Rede-  
velopment | DMRC Corridors

- S1 Jawahar Lal Nehru Stadium
- S2 Thyagaraj Sports Complex
- S3 Dhyan Chand National Stadium
- S4 Dr. Shyama Prasad Mukherjee Aquatic Complex, Talkatora Stadium
- S5 Indira Gandhi Stadium
- S6 R.K.Khanna Tennis Complex (DLTA Stadium)
- S7 Siri Fort Sports Complex
- S8 Karni Singh Shooting Range
- S9 Yamuna Sports Complex
- S10 Delhi University
- S11 Chattarsal Stadium
- S12 Shivaji Stadium

- H1 Commonwealth Games Village
- H2 Mega Housing, Vasant Kunj

- R1 Bhishma Pitamah Marg
- R2 Lodhi Road
- R3 Ring Road (Ashram to ITO)
- R4 NH 24 (Gurjar Samrat Mir Bhoj Marg)
- R5 Vikas Marg, Indraprastha Marg
- R6 Marginal Bund Road
- R7 Sardar Patel Marg
- R8 Mother Teresa Crescent
- R9 Mandir Marg, Udyan Marg, Old R.K. Ashram Marg
- R10 Shyama Prasad Mukherjee Marg, Shradhdhanand Marg, Naya Bazaar Road
- R11 Mall Road (Karnal Road)
- R12 Mehrauli Badarpur Road
- R13 Suraj Kund Road
- R14 Prehladpur Road
- R15 Underpass at Dwarka near Domestic Airport

### METRO

#### Blue Line

1. Dwarka Sector 21 to Vaishali (Ghaziabad)
2. Dwarka Sector 21 to Noida City Centre

#### Yellow Line

1. Jahangirpuri to HUDA City Centre (Gurgaon)
2. Jahangirpuri to Badarpur

#### Red Line

Rithala to Dilshad Garden

#### Green Line

1. Mundka to Inderlok
2. Mundka to Kirti Nagar

#### Airport Link

Airport to New Delhi Railway Station

## Commonwealth Games Village, Housings and Hostels

Master Plan, Commonwealth Village



### Commonwealth Games Village

#### RESIDENTIAL ZONE

##### Consultants

Peridian Asia Pte. Ltd., Singapore

##### Resident Consultants

Sikka Associates, New Delhi  
Integral Design, New Delhi

#### NON RESIDENTIAL ZONE

**Consultants** Daryl Jackson Pty.Ltd., Australia

##### Local Consortium Member

Suresh Goel Associates, New Delhi

### Mega Housing, Vasant Kunj

##### Consultants

Sumit Ghosh Associates, New Delhi

##### Landscape Consultants

Satish Khanna Associates, New Delhi

The total site area is approx 23.658 hectare which has four pockets of dwelling clusters. The core clusters comprises of G+3 building around a central green and G+8 building are located at the periphery. The housing shall be utilized for visitors/guests coming to CWG-2010.

##### Project Coordinators for Commonwealth Games Village and Mega Housing, Vasant Kunj

Delhi Development Authority DDA



Master Plan, Mega Housing, Vasant Kunj



## Streetscaping and Infrastructure Development

### Redevelopment of Existing Roads

1. Baba Kharak Singh Marg
2. Tees January Lane
3. Tees January Marg
4. Mandir Marg
5. Udyan Marg
6. Old R.K. Ashram Marg
7. Bharion Marg
8. Ring Road (Ashram to ITO)
9. Indraprastha Marg
10. Jawahar Lal Nehru Marg (Delhi Gate to Raj Ghat)
11. Lodhi Road
12. Bishma Pitama Marg
13. Road to Meherchand Market
14. Jawaharlal Nehru Stadium road
15. Road in front of CGO Complex
16. Mehrauli-Badarpur Road
17. Surajkund Road
18. Prehladpur Road
19. Vikas Marg
20. Marginal Bundh Road
21. National Highway-24
22. Mall Road

The core areas of Connaught Place including Inner and Outer Circles, radial roads, and few other selected areas are also being upgraded by New Delhi Municipal Council NDMC.

#### Consultants [Partial list]

Pradeep Sachdeva Design Associates, New Delhi  
Oasis Designs Inc., New Delhi  
Creators, New Delhi

#### Scope of Work

Contextually analyzing each road in terms of its existing features within the site, the land use around and developing a unique solution for each road side.

#### Landscape Design Concept

Apart from environmental concerns, the streetscape designs aim at buffering the pedestrian areas from the vehicular zones, creating comfortable cross-over, underpasses with appropriate ramp access for all pedestrian and cyclists. Street furniture, signage, edge barrier design, lighting design and planting are the important components of the comprehensive landscape development plan for the streetscape.

#### Project Coordinators for Streetscaping Works

Public Works Department PWD  
Municipal Corporation of Delhi MCD  
New Delhi Municipal Council NDMC

### Landscape Development of Barapula Drain, and, Construction of elevated road over the drain from Sarai Kale Khan to JLN Stadium

The total length of the site is approximately 12.5 km and in phase-1, 4.6 km is being taken starting from Jawaharlal Nehru Stadium to Ring Road near Sarai Kale Khan and the width of the drainage basin varies from 70 metres to 110 metres. The drainage basin is being developed as an ecological corridor by creating Flood Zone, which will take care of excess inflow of water in case of moderate monsoons.

An elevated corridor under construction will take the athletes from CWG Village to Jawaharlal Nehru Stadium via Ring Road. The starting clover-leaf by the side of Ring Road and the Silver Oak Park behind the Stadium are being designed so as to complement the whole scheme.

#### Project Coordinators

Public Works Department PWD  
Delhi Development Authority DDA

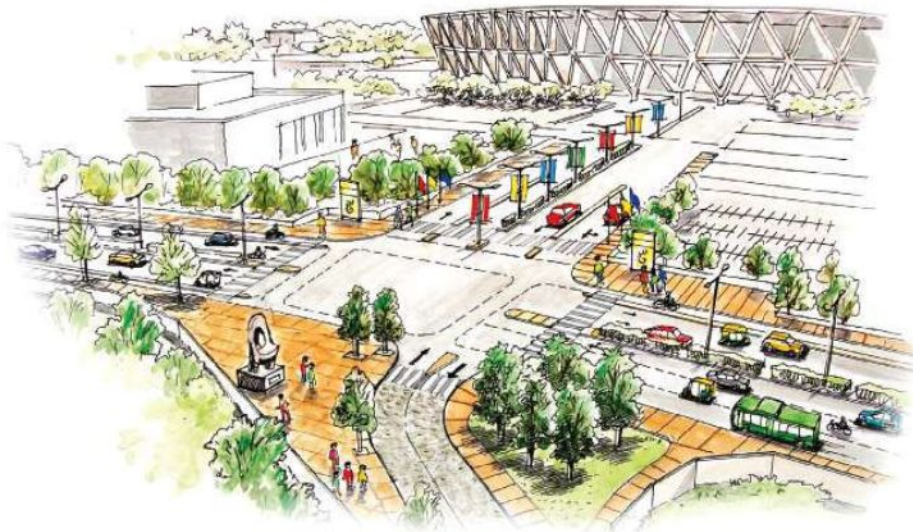
**KK Sharma**, Principal Secretary, Public Works Department PWD speaks to **Sujata Kohli** on the city's development projects for the Commonwealth Games...



**Development projects that the Delhi Government and State Government has initiated for the city...**

I came into the process of this specific development around two years back in May 2008 as Principal Secretary, Public Works Department PWD. Prior to that, Delhi was awarded to host the Commonwealth Games and both the Government of India and the Delhi Government

started analyzing and assessing the types of works that would be carried out in the city. Mainly, there are two categories of works involved – one dealing with infra-



Artist's impression of the proposed entry to Jawaharlal Nehru Stadium



structure works in which various development agencies are involved and the other hosting and organizing of the Games itself, bringing athletes to the venue, broadcasting advertisements etc. that has been taken care of by the Organizing Committee and Sports Authority of India.

The works falling under the urban development comprise of construction and redevelopment of sports facilities, stadiums, training areas and housings for visiting delegates & sports persons etc. These also include redevelopment of all the areas falling along the circulation zones for the events – from the Games Village to various stadiums, and between the stadiums etc. by roads, flyovers, railway under bridges, and Metro Rail routes. These also include the airport and the roads coming from it to various venues and housings. A few selected main roads are also being taken up in the near periphery of all the stadiums and training venues. In all, almost 65kms of the road stretch has been identified and taken up for the development works, under PWD.

Also, this is a big opportunity to upgrade the existing infrastructure of the city. Various improvement works are also being carried out in areas near the borders of the city of Delhi, towards Faridabad, Gurgaon, Ghaziabad, Murthal, on National Highways NH-1, NH-8, NH-10 and NH-24 so as to cater to the visitors and spectators coming from the neighboring states.

There is a host city agreement that requires that streets surrounding the Commonwealth Games venues to be developed and to be handed over to the Organizing Committee for a month prior to the event.

#### **Agencies involved in the development works...**

Multiple agencies are involved in various specific projects related to the Commonwealth Games. Along with PWD which is tak-

ing care of the existing and few new roads, there is Central Public Works Department (CPWD) working mainly on the redevelopment of existing stadiums. Delhi Development Authority (DDA) is working on Commonwealth Village, few roads, flyovers and refurbishment of few stadiums, while Municipal Corporation of Delhi (MCD) is working on few existing roads. New Delhi Municipal Corporation (NDMC), Delhi Jal Board (DJB), Delhi Transco Pvt. Ltd., Delhi Mass Rapid Corporation (DMRC) and National Highway Authority of India (NHAI) are doing projects in their specific domains. Sports Authority of India (SAI) is an umbrella organization for all the sports activities and related events.

#### **Multiplicity of Authorities...**

Delhi is a living and thriving city. It is a challenge to implement all the various works in this scenario – the traffic has to run, the water supply lines have to be intact, the electricity cables have to be untouched while the redevelopment is ongoing.

In a city, multiplicity of authorities has always been an issue with any development work falling in public domain. For such an immense infrastructure work there are land related issues as well. A few committees have been constituted under the chairmanship of the Lieutenant Governor. All executing agencies involved in Commonwealth Games are represented in the meetings, which take place on monthly basis to assess the work progress and take care of any issue of any authority involved. This forum has been very effective as far as coordination between various agencies is concerned. Of late, there are also regular meetings of Cabinet Secretariat with group of Ministers from Ministry of Sports and Urban Development where review of works takes place.

DMRC is a good example where these hurdles have been overcome, but it would not be appropriate to compare and access

these development works with the works that of DMRC. Though DMRC is doing outstanding works but one should understand that it has only one kind of work whereas we need to perform all kinds of works of multiple nature related to power, water, circulation, traffic etc. so things have not been too easy. But I must say that these are getting better day by day.

#### **Role of Private Players...**

Most of our works are being executed by private contractors, especially in areas of flyovers and roads. Along with them, we have professional consultants from the field of architecture and landscape design who are working on the various projects. In some cases, like Thyagaraj Stadium, the architectural consultants are from abroad who have teamed with professionals from here for the execution of actual works.

#### **Sustainable means and ways of development, economic factors...**

All the projects of civil engineering falling in the purview of civic agencies undergo a process of technical and financial scrutiny, where the most appropriate bid is selected for the final work. All the traffic related works goes to DDA's Technical committee. After this clearance, the proposals are sent to Delhi Urban Art Commission DUAC where they are assessed for their aesthetic character. Finally, the work is taken up for execution on site.

For roads, as a new technology, we have recently introduced in-situ surfacing which involves sculling the existing road and then after assessment, adding around only 30% of new material and reusing the older one. This means reducing the cost extensively and also preventing the existing road level to get increased after each resurfacing under the conventional method. This is a new



*Proposed Plan, Development of area under IIT-Flyover*



technology which shall be gradually adopting for all roads. With all this – various scrutiny stages, and reuse wherever possible, I would say that the economic and aesthetic factors are taken care of to a large extent.

### **Role of Professionals**

Landscape design is a vital part of urban development in any city. Take the example of the newly built Thyagaraj Stadium built by our engineers. The public in general is happy with the final outcome. I feel it is the vision of the architects and landscape architects who have visualized the entire scheme. Their contribution is aptly evident.

In the streetscaping projects, one has realized that how the involvement of design consultants can change the way one looks at the road. We now have areas for pedestrians, trees and other elements, and one realizes the value of these. In fact now, as per the guidelines of Unified Traffic and Transportation Planning and Engineering Centre UTTIPEC of Delhi Development Authority, it is mandatory to have areas for pedestrians in all road designs. It has separate guidelines for streetscapes. The streetscaping works being executed now as part of the Commonwealth Games developments are good projects and can become models for future projects.

Another important initiative that has been taken is regarding flyovers. PWD has many flyovers under its domain. Some are old and few are newly constructed. Generally, the areas under the flyovers and various rotaries were given to private agencies and companies to develop and maintenance. We have had mixed experience in these. It is only very recently that with the help of Indian Society of Landscape Architects ISOLA, we have been able to engage private landscape professionals for the new works of this nature. Quite a few of these works are now under execution. It will definitely change the look of such places in a very positive way.

### **After Commonwealth Games...**

I feel that today citizens of Delhi are aware about what is happening around and very conscious about what to expect and demand from the city. The government authorities, too, are equally responsive to these expectations. Engineers, irrespective of what department or agency they are from, are doing a fabulous job.

The city would definitely change for the better after all these improvement programmes and projects. I am in favor of a comprehensive maintenance clause with the executing agencies / contractors to preserve the new development and landscape works, but eventually it is up to everyone in the city to preserve it.

## Stadiums Sports & Training Facilities



### **Siri Fort Sports Complex**

#### **Refurbishment of Old Area**

##### **Consultants**

Architects Bureau, New Delhi  
ATK Consultants, New Delhi

Siri Fort Sports Complex comprises of 10 tennis courts, a swimming pool, a golf course, a gymnasium, aerobics center, jogging tracks, badminton & squash courts, basket ball court, football and cricket field etc. The Sports Complex is being upgraded to improve the environment and circulation by creating new approach/ entrances to existing building, lighting, and arrival square etc. This sports complex is one of the practice venues for badminton, Lawn Tennis and Swimming Pool for CWG-2010.

#### **New Area for Badminton & Squash Courts**

##### **Consultant**

Peddle Throp Associates, Australia

##### **Resident Consultants**

FORMium Landscape Architects in association with  
INDE Landscape Architects, Bangalore

##### **Streetscaping around**

Sikka Associates, New Delhi

The new Siri Fort Stadium occupies an area of approximately 12.3 hectares and is towards North-East of the overall Siri Fort Sports Complex. This sports complex shall be used for badminton and squash competition during the event.

**Project Coordinators** Delhi Development Authority DDA



## Stadiums Sports & Training Facilities



Plan, Yamuna Sports Complex

### Yamuna Sports Complex

Refurbishment of Old Area

**Consultants**

Architects Bureau, New Delhi  
ATK Consultants, New Delhi

New Building for Table Tennis

**Consultant**

Peddle Throp Associates, Australia

**Resident Consultants**

FORMium Landscape Architects in  
association with INDE Landscape  
Architects, Bangalore

**Project Coordinators**

Delhi Development Authority DDA

### Refurbishment of Sports Complex, Saket

The Saket Sports Complex was developed in 1990. An entrance plaza and additional parking for approx 40 cars is being upgraded now. The total area of the complex is approximately 6.3 hectares. It is one of the practice venues for badminton for CWG-2010.

**Project Coordinators**

Delhi Development Authority DDA

### Landscape Development of Indira Gandhi Sports Complex

**Master Plan**

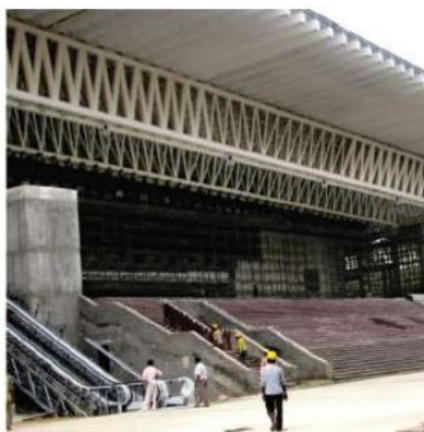
CES India Ltd., New Delhi

**Landscape Consultant**

Design Accord Consultant, New Delhi

**Project Coordinators**

Central Public Works Department CPWD



Thyagaraj Stadium | Image source: skyscrapercity.com

### Thyagaraj Stadium

**Consultant**

Peddle Throp Melbourne, Australia

**Project Coordinators**

Central Public Works Department CPWD

### Landscape Development of Shyama Prasad Mukherjee Aquatics Centre, Talkatora Gardens

**Master Plan**

CES India Ltd., New Delhi

**Landscape Consultant**

Design Accord Consultant, New Delhi

**Project Coordinators**

Central Public Works Department CPWD

Upgradation of existing infrastructure for the five major stadias of Sports Authority of India – Jawaharlal Nehru Stadium, Dr. Karni Singh Shooting Range and Major Dhyaan Chand National Stadium Complex is being carried out by Central Public Works Department CPWD.

## Airport



Rendered view, Delhi Airport | Image source: topnews.in

### Landscape Development around Terminal 3 and Associated Works

**Main Consultant**

AECOM Hong Kong

**Sub Consultant**

Beyond Built, New Delhi

**Scope of Work**

Design concept and development, coordination with agencies at site office and periodic site supervision for hardscape and softscape works.

**Design Intent**

The landscape concept for the New Terminal-T3 and its adjoining areas is based on the notion of flight. The landscape journey from the junction of the old road and central spine begins at the 'the vortex' which is designed with catch the wind emulating 'take off'. From here on the concept of flight is brought out with the use of steep turfed berms starting rising upto 4 metres. Angular water features are located at significant junctions which add to the experience. The planting scheme and lighting effects add further impact to the day and night time aesthetics.



The Editors are thankful to the inputs received from Kalpana Khurana, and the good offices of Director (Public Relations), Delhi Development Authority; Director (Landscape), Delhi Development Authority; and design consultants involved in the works. Other sources of information: [www.cwgdelhi2010.org](http://www.cwgdelhi2010.org); [www.delhigovt.nic.in](http://www.delhigovt.nic.in); and, [www.commonwealth2010.in](http://www.commonwealth2010.in)

Although every effort has been made to make a comprehensive list of the main works being undertaken for the event – especially those in which landscape architects are involved – this is not an exhaustive list.





# BEIJING OLYMPICS 2008



*Throughout its 5,000 years of recorded history, the Chinese contributions to art, science and technological progress has been extraordinary and far-reaching. The Chinese calendar, movable type, master metallurgical craftwork, poetry, calligraphic art, entire schools of philosophical thought, feng shui, sublime landscape painting are but a brief representation of China's contribution to the progress of civilization. So too in city building has China provided the world with fundamental, forward-looking principles and examples of creating environments for living. China evolved the grid and applied it to the planning, construction and ordering of its great imperial capital cities, including Beijing. The idea of the city gate or entry, the principle of the city pole that facilitates orientation, methods of arranging buildings to maximize human comfort and the fostering of a symbiotic relationship between man and nature are representative of city planning ideals that have their genesis in China, and have found application throughout the world. Chinese city planning embraces the principle of a civic order, formed in large part by the creation of open spaces planned and executed at a grand scale. This sense of order, of seeking balance, is manifested in the great landscape and garden design tradition of China, one that is manifested in such disparate locales as the imperial gardens of Japan to the famous Kew Gardens of England. The history of China may be marked by its famous dynastic periods, each of which has been responsible for extending a long history of human achievements across the arts, science and technology. Such a dynastic tradition is unique, continuing to the present day albeit within contemporary forms and social order, and is to be celebrated.*

*Equally important to the nurturing of mind and spirit has been China's contribution to development of the body through sport. Like music and art, sport is one of the world's most significant opportunities to encourage human interaction and understanding.*

*The modern Olympics embrace this principle of encouraging human understanding as one of its basic ideals. Sporting contests allow for the human body to test its capacity, to be "higher, faster, stronger"; to achieve at a level that maximizes human athletic performance. The Olympics provide a forum for athletes from around the world to perform and recognize the heroic sporting achievements of humankind.*

The Olympic Green was both an ambitious, unprecedented effort at city building as well as opportunity to host the Olympiad in a setting of immense history and cultural richness.

The design for the Olympic Green celebrates the cultural achievements of the Chinese people, and the sporting achievements of the world. The design proposal is termed as the "Axes of Human Achievement". It is connected to an environmental ideal that has its beginnings in the myth and legends of ancient China, linked to the present day in recognizing the contemporary imperatives of sustainable development. Such an environmental orientation is necessary, for the world's collective cultural and sporting achievements are interwoven with the health of the Earth.

## Design Concept

The design proposal for the Olympic Green seeks balance and integration which is both poetic and pragmatic. It seeks to balance East with West, the ancient with the contemporary, development with nature, and existing surrounding context with the Olympic Green. The concept has three fundamental elements, to include the following:

- The Forest Park, and its extension southward;
- The Cultural Axis, the northward extension and conclusion of the great imperial axis; and,
- The Olympic Axis, linking the Asian Games site with the National Stadium.

## The Forest Park

The Forest Park consists of an area of land to the north of the Central Area of the Olympic Green. The Forest Park of a grand dimension is conceived as an ideal paradise from which Chinese civilization emerged, many millennia ago. The Park is a sculpted land-form of hills, forests and meadows created by excavating a lake within the Park – the "Dragon Lake". The hills in the northwest are intended to represent the immortal Kunlun Mountains of western China, from which



spring life-giving water and the great rivers of China such as the Yellow, Yangtze, Pearl and Mekong. Southern views from atop these mountains will encompass the Central Area of the Olympic Green. The waters flow to the Dragon Lake, a metaphor for the East China Sea, within which lie the mythic Penglai Islands. A diverse mix of pine forests, deciduous trees and open lawn areas lie

buildings are proposed to be placed at its edge rather than on-axis. The enduring power, boldness and simplicity of the axis extend beyond the relatively temporal nature of buildings. The concept extends the axis some 5 kilometers through the Olympic Green site. Along the axis, the proposal seeks to commemorate the achievements and contributions of the great Chinese dy-

## The Olympic Axis

The design concept proposes an axis that begins within the existing Asian Games stadium, extending northeast through the proposed National Stadium, continuing onward to a Sports Heroes Garden, intersecting with the Cultural Axis then concluding within the Forest Park at an Olympic Spirit Park. This axis is termed the Olympic Axis; it is representa-



within the Park. A peach tree flower forest edges the Dragon Lake to the east, representing the idyllic society created by the Tong Dynasty poet Tao Yuan Ming. The Forest Park provides a wide range of active and passive recreational uses, easily accessed from surrounding roadways and served by an internal parkway circulation network. It also is linked physically and visually with the proposed Olympic Village site in the northwest portion of the Central Area.

The pastoral nature of the Forest Park gives way to a more ordered open space idea as the water from the lake flows southward. In a gesture that seeks to balance the great parks of central Beijing with an idea of equal scope and grandeur in north Beijing, the water flows southward within a canal adjacent to a tree-lined esplanade. The canal and esplanade are arranged to symbolically link the Forest Park, Central Area and Asian Games site through nature. Thus, pedestrians and bicyclists can move easily "through nature" from the Forest Park in the north to the Asian Games site in the south.

## The Cultural Axis

Beijing was founded on the basis of its north-south axis. Development of the city over centuries has been based on this axis. It is the intention of the City to conclude the axis within the Olympic Green. By respecting the significance of the axis to the city, new

nasties, beginning 5,000 years ago up to the present day. This axis of cultural achievement is divided into 1,000-meter segments, symbolizing 1,000 years whose endpoints lie within commemorative plazas.

The design of the axis and its commemorative plazas is intended to be contemporary in its actual expression rather than a historic replication. The design is to be bold, highly interpretive and respectful of its setting and importance. As one moves from north to south, the commemorative plazas will include the following:

*3,000 A.D Five Emperors Period, celebrate the development of the Chinese calendar.*

*2,000 A.D Xia Dynasty, celebrate the refinement of bronze craftwork.*

*Zhou Dynasty, celebrate the beginning of city building.*

*Han Dynasty, celebrate the development of philosophical thought, a unified China and recorded history.*

*Song Dynasty, celebrate the peak of culture and art.*

*Millennium 2000, celebrate the achievements of Yuan, Ming, Qing and The People's Republic of China.*

The scale of the axis is monumental, to emphasize its significance. It concludes with a powerful simplicity, in the hills of the Forest Park, signifying the beginning of Chinese culture and civilization in nature.

tional in that it reflects an idea in a compelling symbolic manner. Significantly, the Olympic Axis intersects the Cultural Axis at the Zhou Dynasty Plaza, which commemorates the Chinese contribution to city building. The concept proposes that this point of intersection also be the site of the Olympic flag-raising square during the Games.

The combination of the Forest Park, Cultural and Olympic Axes provide a framework within which the building development program is arranged. The framework provides flexibility in the ultimate siting and design of each Olympic venue. The design concept provides for the phased implementation of the Olympic Green during the next 5 years. It maximizes the utilization of land, and provides for the seamless integration of the Olympic Green with the surrounding context of north Beijing.

FACING PAGE | **Master Plan**

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**Architectural model showing the integration of existing street network into Olympic Green;**

**Aerial view looking north towards Forest Park;**

**View of the Olympic Village** [Image source: [www.newsroom.ucla.edu](http://www.newsroom.ucla.edu)]

Text and all images courtesy Sasaki Associates

Sasaki won first prize in the international design competition to establish the master plan for the Olympic Green – the main site of the 2008 Olympic Games in Beijing.



Vinita Vijayan Pugal

# Sustainable LANDSCAPE DESIGN

Simple ideas and issues to be considered for sustainable landscape design...

**T**he role of a landscape architect is not just to create a signature design, but to produce an environmentally sound and user-friendly design that is appropriate for a particular location. Often, when assigned a project, landscape architects design opulent schemes that are hard to construct and difficult to maintain. Unfortunately, the design and choice of material are hardly governed by the ease of post-construction operations and maintenance measures. This aspect is important especially for outdoor spaces since they are more affected by the elements of climate. Today, there are many projects being conceptualized, designed and constructed, that are going to shape the built environment and infrastructure in India. Outdoor spaces and the way we deal with the ecological and environmental aspects will have a lasting impact.

Leading organizations that promote green building ratings systems and certifications are:

**LEED (Leadership in Energy and Environment Design Green Building Rating System)**

LEED is a voluntary standards and certification program that defines green building and environmentally responsible

projects. Developed by the U.S. Green Building Council (USGBC), LEED provides building owners and operators a concise framework for identifying and implementing practical and measurable green building design, construction, operations and maintenance solutions. (*Reference:* [www.usgbc.org](http://www.usgbc.org))

**TERI (The Energy and Research Institute)**  
TERI has developed the national rating system for green buildings in India – GRIHA. It is an acronym for Green Rating for Integrated Habitat Assessment. Developed jointly with the Ministry of New and Renewable Energy to the Indian Government, GRIHA is a green building design evaluation system and is suitable for all kinds of buildings in different climatic zones of the country. (*Reference:* [www.grihaindia.org](http://www.grihaindia.org))

#### **The Sustainable Sites Initiative**

This is an interdisciplinary effort by the American Society of Landscape Architects, the Lady Bird Johnson Wildflower Center and the United States Botanic Garden to create voluntary national guidelines and performance benchmarks for sustainable land design, construction and maintenance practices. (*Reference:* [www.sustainablesites.org](http://www.sustainablesites.org))

The format chosen to discuss the subject in this article is – The Sustainable Sites Initiative: Guidelines and Performance Benchmark 2009. The Sustainable Sites Initiative SSI ‘is dedicated to fostering a transformation in land development and management practices that bring the essential importance of ecosystem services to the forefront’. The SSI guideline is modeled after LEED and is more tuned to ecology, site planning and landscape, and it will be simple and accessible for landscape architects to apply on their projects.

The intent of this article is to set a platform for discussion of sustainable alternatives to landscape design ideas in India. In the series of articles on Sustainable Landscape Design in the future issues of this Journal, we aim to discuss the following:

1. Site Selection
2. Pre-design Assessment and Planning
3. Site Design – Water
4. Site Design – Soil and Vegetation
5. Site Design – Material Selection
6. Site Design – Human Health and Wellbeing
7. Operation and Maintenance
8. Monitoring and Innovation



## Site Selection

Selecting appropriate site helps preserve natural environment as well as reduce the cost of implementation. The development of rural sites outside urban areas can negatively impact habitats and watersheds. These developments also encourage undesirable urban sprawl and loss of agricultural land. It is more desirable to build in urban areas with existing infrastructure instead of choosing greenfield sites for development. In fact, it is preferable to use sites within urban areas that are dilapidated and/or contaminated due to previous industrial or commercial use. The development of such urban sites gives new life to such areas and can improve the urban fabric and bring in vitality to existing neighborhoods. Development projects on inappropriate sites such as floodplains, wetlands, and assigned farmland should be avoided in order to reduce impact of construction on sensitive areas. Floodplains remove pollutants from the stormwater and act as a reserve for plants and animals, while recharging the ground water. Wetlands are known to be the most productive component of ecosystems. An awareness of the value of floodplains and wetland habitats should become an integral component of the design guidelines.

Site development that is accessible by pedestrians and bicyclists and near public transit should be encouraged. Many measures could be adopted to promote the use of fuel efficient transportation systems – bicycle parking, reduce the parking lot size, and offer preferred parking for carpools etc.

Landscape architects should provide owners guidance and strategic counsel in site selection when ever possible and manage issues related to site from the early stages of a project onwards.

## Pre-design Assessment and Planning

Identifying the sustainable resources and opportunities on site, prior to the design phase will help set sustainable goals for the project. An analysis of regional and cultural systems associated with the project site and its surrounds reduces the environmental impact and reveals sustainable opportunities. Soil report, geological and hydrological evaluation, habitat studies and vegetation inventory should be compiled during the Site Inventory Phase. Cultural analysis such as current land use, existing structure, historic and cultural features play an important role in design.

An integrated team should be gathered to participate in the design exercise. This multidisciplinary team of professionals should identify the goals and principles of the project and guide its proper implementation.

The project should include users in the design process in form of charrettes or public participation meetings. This process encourages an open exchange of information and ideas. Together the participants help establish a collective vision for the future of the community, and share responsibility for problems as well as their solutions.

## Site Design – Water

Water is one of the most vital resources for the survival of living organisms on earth and yet only 2.5% of Earth's water is fresh. About two-third of that is frozen; the rest is the liquid surface water and ground water. And, 46% of people on earth do not have water piped to their homes. In 15 years, 1.8 billion people will live in regions of severe water scarcity. (*Reference: National Geographic, April 2010, Water-Our Thirsty World*)

Taking steps toward reducing water need is essential to landscape architecture as a profession. To conserve water, the use of potable water and ground water extraction for landscape irrigation should be reduced. It can also be achieved by appropriate drought-tolerant plant species and use of efficient irrigation methods. The use of recycled grey water and captured rain water are other ways to reduce potable water consumption.

Some states in India receive sufficient rainfall that could be captured and stored for dry seasons. In regions with lower rainfall, landscape design should use native plants, and/or drought tolerant and succulent species that need less water. The use of lawns in designed landscapes should be kept to minimum. Lawns are not native to India and are highly inefficient considering their water use, long term maintenance costs and several ecological implications. One can reduce the landscape water requirement to minimize the load on the municipal water supply and depletion of groundwater resources.

Xeriscape landscaping is an innovative, comprehensive approach to landscaping for water conservation and pollution prevention. Traditional landscapes might incorporate one or two principles of water conservation, but xeriscape landscaping uses all of the them in planning and design, soil analysis, selection of suitable plants, practical turf areas, efficient irrigation, use of mulches, and appropriate maintenance (Welsh et al., 1993).

Low Impact Development (LID) is a term used in the USA to describe a land planning and engineering design approach to managing stormwater runoff. As with other alternative development strategies, LID seeks to control stormwater at its source. Rather than





moving stormwater offsite through a conveyance system, the goal of LID is to restore the natural, pre-developed ability of an urban site to absorb stormwater. (Reference: [www.epa.gov](http://www.epa.gov))

A 'rain garden' is an excellent point source control method for stormwater management that is not only aesthetically pleasing but also very efficient. Bioswales, rain gardens, roof garden and constructed wetlands could be used to improve the stormwater quality. The quality of stormwater runoff can be also controlled by reducing or even eliminating the use of pesticides, herbicides, fertilizers and other chemicals in landscape maintenance.

Stormwater generated within the site should be treated by decreasing the impervious sur-

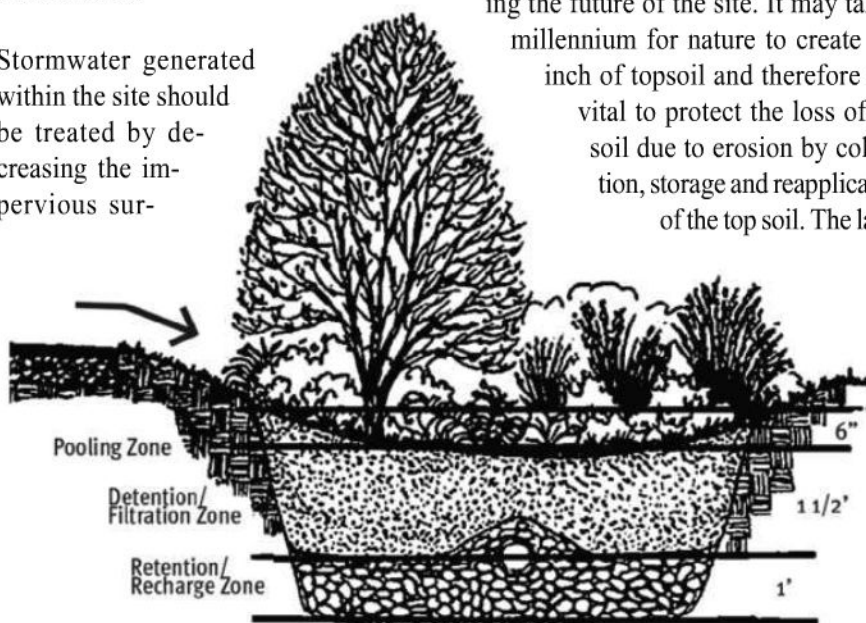
faces and improving the quality of water by natural filtration through soil layers. Excess stormwater discharge increases the possibility of flooding. The quality of stormwater discharged affects the aquatic life drastically. River and stream edge, wetlands and shorelines should also be protected to allow for improved water quality and soil erosion control. A rehabilitated ecosystem will increase ground water recharge, and provide recreation opportunities for the adjacent community and improve fisheries.

### Site Design-Soil and Vegetation

For landscape architects, existing site features play an important role in shaping the future of the site. It may take a millennium for nature to create one inch of topsoil and therefore it is vital to protect the loss of top soil due to erosion by collection, storage and reapplication of the top soil. The land-

scape architects involvement early in the construction phase can be of immense advantage to the project. It is advisable to prepare a soil management plan as part of the construction drawing document to help during the construction process. It should be developed and communicated to the contractor prior to construction.

The natural functions of a site (hydrologic, geologic, and microclimatic) can be disrupted by the placement of a building on it. The development footprint and disturbance should therefore be limited beyond buildings, roads and service utility trenches. Construction activities can compact soil and disrupt soil horizons. It is not easy to establish vegetation on soils disturbed in this manner and therefore building and development perimeters should be clearly defined. Site development should ideally occur on portions of site that have already been impacted by development, and not on undisturbed land. The site and landscape design needs to be integrated with existing grades and hydrologic systems so that the existing hydrology of the site and the surrounding are not disrupted. Grouping underground utilities with roadway alignments may minimize site disturbance. Impermeable surfaces should be reduced in the design scheme since these increase storm water runoff quantities







as well as the heat island effect. The use of porous asphalt and concrete, unit pavers, open grid paving or even gravel paving facilitate infiltration and improve ground water recharge. The amount of area dedicated for parking should be reduced and possibly integrated as part of the building structure to avoid extensive paved surfaces. Vehicular circulation routes should also be designed efficiently to avoid unnecessary roadwork.

It has been observed that urban areas in India have become much warmer than previous years due to the dramatic increase in hard surfaces, including vast expanses of roads and new buildings. This phenomenon termed as 'heat island' is described as built up areas that are hotter than nearby rural areas. (Reference: [www.epa.gov](http://www.epa.gov)).

Vegetation provides cooling through shading and evapotranspiration. Vegetation is known to insulate buildings by reducing wind velocity and air movement into the building. The use of windbreaks of trees and dense shrubs around the building can bring down the energy consumption for heating and cooling significantly. It is advisable to select large or medium size deciduous trees that provide shade in the summer, reduce heat and improve the microclimate considerably. The use of light colored materials

with a high albedo for paving and roofs can also help in reducing the heat island in urban areas.

Green roofs involve growing plants on rooftops, thus replacing the vegetated footprint that was destroyed when the building was constructed. Green roofs, also referred to as 'vegetated roof covers,' 'living roofs,' or 'eco-roofs,' consist of relatively thin layers of living plants installed on top of conventional roofs. It is an increasingly popular strategy because it controls stormwater runoff, erosion, and pollution, improving the water quality. It also helps in mitigating urban heat-island effects, as well as cooling and cleaning the air.

A landscape design should try to integrate important site features that are a valuable resource adding character to the site and providing a sense of place. Existing trees need to be protected, preserved or transplanted. Vegetation that is to be retained should be identified in the drawings. Construction fencing should be placed around the drip line of trees so that the roots are not damaged. Invasive plants should be identified and removed over a period of time to limit damage to the ecosystem.

Native plants or climate-adapted species that require less water and maintenance

should be planted in new developments. Native plants usually require fewer resources for maintenance and also support native wildlife.

Sustainable aspects related to soil and vegetation is an extensive subject that needs a lot of deliberation – only the most relevant methods have been summarized in this section.

## Site Design-Material Selection

Appropriate selection of materials and products is important to sustainable design to minimize the adverse impacts to the environment from the very source of the material by designing and manufacturing environmentally friendly 'green products.' The 'Life Cycle Cost' and embodied energy for each material has to be accounted for in construction. Life-cycle stages include raw material extraction, processing, manufacture, fabrication, transportation, installation, use and maintenance, and recycling or disposal.

### FACING PAGE

TOP LEFT | **Xeriscape** [Image source: [treehugger.com](http://treehugger.com)]

TOP RIGHT | **Bioswale** [Photo credit: [Vinita Vijayan Pugal](#)]

BOTTOM | **Cross section of a rain garden** [Image source: [hvatoday.com](http://hvatoday.com)]

### THIS PAGE

TOP LEFT | **Cupertino Blackberry Farm – porous gravel/ grass parking lot with bioswale** [Photo credit: [Adit Pal](#)]

TOP RIGHT | **Permeable paving** [Image source: [good2golawncare.com](http://good2golawncare.com)]



landscape architect should retain existing structures on site as far as possible so as to avoid disposal to landfills – this will also in turn create a sense of place and identity. Designing for deconstruction and disassembly also avoids future waste since the product or assembly will be recyclable. Specifying recycled products reduces extraction of new materials. The need for replacements in the future can be reduced by specifying durable and low maintenance products.

Rapidly renewable materials such as bamboo can be used for landscape structures. Bamboo can be harvested in a cycle shorter than 10 years. Use of threatened species of trees for any kind of wood work needs to be avoided.

The use of expensive natural stone that is quarried from remote and distant regions increases the impact on environment. Local materials should be used as far as possible for construction. The use of local material supports the local economy and also reduces the use of fossil fuels in transportation.

The purpose of outdoor lighting is to ensure safety and provide legibility; excess lighting will affect the night sky and in turn affects the behavioral pattern of various nocturnal species. These animals provide important ecological balance in our ecosystem. Excess outdoor lighting and façade lighting should therefore be minimized. Outdoor lighting system efficiency can be enhanced by preparing a photometric plan that helps identify areas that need light for safety and legibility.

Adhesives, sealants, paints, and coating with a reduced percentage of Volatile Organic Compounds (VOC's) should be encouraged in all construction products to reduce the emission of these toxic compounds.

## Site Design – Human Health and Wellbeing

Sustainable design seeks to reduce negative impacts on the environment, and the health and comfort of building occupants, thereby improving building performance. The basic objectives of sustainability are to reduce consumption of non-renewable resources, minimize waste, and create healthy, productive environments.

Visual and physical connections to outdoor spaces tend to improve the mental and emotional health of the users. Outdoor gathering spaces help increase social ties and community integration. Providing outdoor spaces of different size and scale encourages multiple and varied use of such spaces. Site development should include activities that provide economic and social benefits to local communities. On-site opportunities that will support outdoor physical activities should be encouraged to improve human health. Preserving existing features of cultural and historical importance gives a sense of place to the users. A safe, accessible, and legible outdoor space promotes better use of the site. Users and visitors should be educated about the advantages of sustainable design to promote awareness. It has been observed that campuses designed on sustainable principles enhance the health and wellbeing of the user.

## Operation and Maintenance

Operation and maintenance strategies are vital for the long term efficiency of any development. A site maintenance plan should be prepared that includes aspects such as storage and collection of recyclables.

Renewable energy sources such as solar and wind energy should be encouraged. Optimize outdoor lighting and select efficient irrigation system to reduce energy needs in landscape.

Exposure to tobacco smoke should be minimized through management policies to improve human health. The use of equipment that exposes users to air pollutants should be reduced or eliminated. The use of fuel efficient vehicles should be promoted by providing preferred parking space.

## Monitoring and Innovation

POE (Post Occupancy Evaluation) is a way to evaluate the design from the user's point of view and provides the designer with opportunity to correct previous mistakes. A maintenance plan or manual should be prepared to ensure that the design intent is maintained during operation. Performance of sustainable design practices should be monitored for the future.

Innovation is one of the most important issues in modern knowledge society. Innovation in site design has to be acknowledged and rewarded to encourage improved sustainable designs ideas for the future. By using the guidelines set by LEED, TERI-GRIHA, SSI and other such standards, designers can explore, design and focus on innovative solutions that open up the possibilities for many new ideas for the future.

## References

Landscape Architectural Graphic Standards, Leonard J. Hopper

The Sustainable Sites Initiative: Guidelines and Performance, Benchmark 2009;

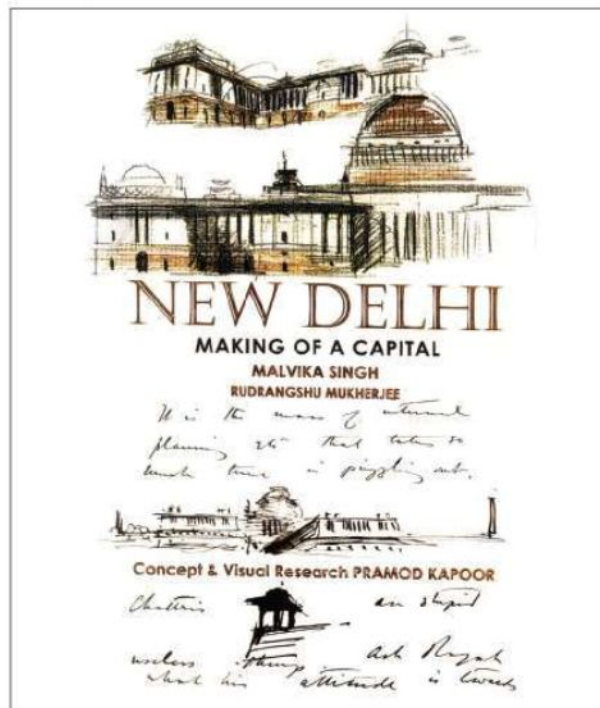
[www.sustainablesites.org](http://www.sustainablesites.org)

[www.teriin.org](http://www.teriin.org)

[www.usgbc.org/LEED/](http://www.usgbc.org/LEED/)

**Vinita Vijayan Pugal** Landscape Architect, LEED AP, has worked over ten years in India before moving to Los Angeles where she is presently working as a Landscape Architect and Project Manager. She has had experience of wide range of landscape architecture and master planning projects at Mia Lehrer & Associate. This included the Annenberg Community Beach House, Santa Monica which is a LEED Gold Project. Vinita can be reached at [vinita.pugal@gmail.com](mailto:vinita.pugal@gmail.com)





# NEW DELHI

## MAKING OF A CAPITAL

### NEW DELHI: Making of a Capital

Authors  
Malvika Singh, Rudrangshu Mukherjee  
Pramod Kapur

Lustre Press / Roli Books 2009

Hardback | 260mm x 285mm | 240 pp

ISBN 9788174365743

Book Review by M Shaheer

Not too many new cities of this scale have been built in the last hundred years – and certainly not any with the pomp, splendour and circumstance and of course, the celebration of Empire that is associated with the building of Imperial Delhi, and so aptly recorded in this new book.

There is nostalgia, of course, because it is impossible to speak of Delhi in Delhi without that (too much has been lost), there is Malvika Singh's text which explains the main events and personalities with a deceptively easy freshness – "the British Crown had a tough example to match and conquer. As a ruling colonial power... there must certainly have been a feeling of nervous confusion, verging on a sense of trepidation to get it right" – but above all, at the heart of the book are the spectacular illustrations and contemporary newspaper reports, letters and other fragments – all mostly as they originally appeared, carefully set out to project a vivid sense of the vast process involved in this grand enterprise. In the words of Herbert Baker, writing in 1912 much before his appointment as architect: "as an event in the history of architecture it may perhaps be compared to the building of Constantinople."

The plan of New Delhi holds its place as an example of neoclassical urbanism and garden city ideas (characterised by the baroque geometry of planning in the "Grand Manner" as it was known) amongst such celebrated examples as L'Enfant's layout for Washington and Baron Haussmann's 19th century redevelopment of Paris – and it is one of perhaps a handful of cities that are familiar to the world through the name of their planner and architect.



More than nine decades have elapsed since the site was chosen, and work started. The central buildings took about twenty years to build. The roads, tree planting, gardens and most of the residential parts were completed earlier; by 1931, when it was formally inaugurated, it was a working administrative enclave, with the beginnings of its own hierarchical culture which was quite the opposite of that found in the *mohallas* of Shahjahanabad.

From the press clippings presented, it is interesting to observe the various ways the city was written about during these years. In the beginning it was news, and also the subject of learned commentary. The question of an appropriate 'style', the shape of a properly impressive Imperial architecture, the merits of the site, all were matters of thoughtful opinion and debate. During construction, reports of progress despite logistical challenges, and interviews and articles by the architects, followed in early 1931 by celebratory pieces such as "Miracle of New Delhi" and the Inauguration. In January of the same year the *Architectural Review* (London) devoted a complete issue to the "study of the new capital of India".

1980 saw the beginning of renewed interest in Lutyens' city. The fiftieth anniversary of its inauguration was the occasion for a major British Council exhibition in Delhi entitled "The Making of New Delhi", put up with help from the School of Planning and Architecture. The same year (or thereabouts) saw the publication of Robert Grant Irving's "Indian Summer", probably the earliest comprehensive assessment of New Delhi, to be followed in the next thirty years by perhaps five or six more books, mainly focused on dissecting the design of the city.

The present work is refreshingly distinct from its predecessors. It concentrates on the process rather than the product. Page followed by highly evocative page displays monochromatic images of, for example: the barren site, the first excavations, foundations, building sites, stone yards (occupying 22 acres, no less), the various manifestations of steam power so necessary for construction at this scale – for transport, for material movement within the site, and to operate cranes and winches.

There is art in the sequential arrangement of these photographs; the pictorial narrative unfolds in an approximation of cinematic flow, virtually independent of the text. And that is the beauty of it.

This is an exceptional compilation, enlivened with some deft touches: a pair of typewritten letters exchanged between Baker and Lutyens (his now well known misgivings, and Baker's rebuttals), arranged to appear on facing pages – speaking to each other, almost – and even in acrimony there is place for civilised banter: so Baker, with casual erudition: "One thing however pleases me in your letter and that is that you have at last taken to reading poetry and your Browning quotation is a very good one..."

A few pages later are the draft and printed versions (surprisingly different texts, but similarly moving in spirit) of Baker's tribute to his friend after the latter's death in 1944 – 'the equal of Wren' – recalling the camaraderie of travelling and discovery in their younger days, and admiration of his 'extraordinary powers'; though whilst speaking of Lutyens' humanism, the draft also includes a passage which in the circumstances might seem curiously out of place: "the words

ordinary meaning today is the human element in life; and in his later years Lutyens tend[ed] to live in a world of his own, the dance-steps of numbers in the words of Tagore, regardless of human sentiments and desires and of the innate dignity of Man".

There is a charmingly inserted facsimile booklet of the original signed professional Agreement of 11 November 1913 for Baker and Lutyens to act as "principal architects and general architectural advisers" setting out the scope and terms of engagement and "the rates of remuneration payable...a sum equal to five percentum of the ascertained and approved cost of the works..."

Also included as an example of 'what might have been' is an early bird's eye sketch indicating the possible sites for the new city, showing a proposal transforming the Yamuna into a large lake, with the establishment of a 'garden city' on the other side.<sup>1</sup>

As to the architectural vocabulary of the city as it was actually built, Lutyens was blunt in his dismissal of the Indian styles – and yet in the design there is overt as well as symbolic allusion to the magnificent royal palaces presiding over historic parts of the north Indian plains at Jaipur and Agra. But there is also an oddity or two – surprising in an architect of such great accomplishment and creative genius: an outcome perhaps of his casual rejection of Indian architecture, and his unwillingness to see the logic in its forms?

There is for example, the much celebrated dome of the Viceregal Lodge. In the words of Robert Byron writing in the *Architectural Review*: "its character is so unprecedented, so uninviting of



comparison with known architecture... that it subordinates everything within view. Its difference from every dome since the Pantheon lies in its solidity... it has the character of a pure *monument*".<sup>2</sup>

Naturally – it is after all in the form of a *stupa*. There is irony in the fact that this centre of power is crowned with a form inspired by a funerary structure (underlined by the Buddhist railing which constitutes the drum). A true dome demonstrates the engineering skill required in the architectural endeavour to elegantly challenge the force of gravity; on the other hand the *stupa* (of a time when domes were unknown) gently succumbs to the same force as a gracefully proportioned solid pile.

Lutyens himself referred to the siting and arrangement of the Secretariats as a blunder, and he was probably right; he couldn't possibly have wanted his classically arranged masterpiece to be approached by way of such a negation of ceremony – the building disappearing and reappearing again (popping down and up?) in the space of a minute or two – it demands a longer space as prelude. The transition from Vijay Chowk to the acropolis happens too rapidly. It didn't seem to bother Baker too much though: the Secretariats are perfectly sited, their colonnaded extensions announcing the entry to the upper square.

Today the Lutyens' precinct presents something of a planning and urban design dilemma: a super-elite enclave – the Orwellian 'Farmer's House' in Charles Correa's incisive terminology; of unquestionably unique heritage value certainly, but not very well-integrated – perhaps even anomalous – with the requirements of the contemporary city. It is embalmed in a state of illusory stasis,

victim to a suspension of planning ensconced in the comfortable terminology of status quo: 'special area', or 'no development zone'. But the status quo is an illusion: arbitrary, unplanned, whimsical and even illegal changes, developments, encroachments within bungalow plots and even public areas have continued to nibble away at its heritage value.

Sadly, there also seems to be a conviction that public buildings built in this part of Delhi should be in the Lutyens' (or Baker) 'style', which correctly might be referred to as the Imperial Delhi style. More than sixty years into a successful democracy, that attitude is obviously ques-

In the end, it is fascinating to remember that the birth of New Delhi occurred virtually at the 'moment of Cubism' (the title of a John Berger essay), and the construction of this last masterpiece of Imperial architecture overlapped with the early and most significant days of the modern movement in architecture, but it came into being without any reference to either of these momentous events. It was built for another world, another time – another people – and was soon a memorial to sensibilities and conceits destroyed forever by the Great War. That independent India also chose it as its seat of power is another story.



tionable, but the pity is the misguided belief that this can actually be accomplished by architects educated in contemporary architectural programmes, blissfully innocent of the rigorous and long education in the traditions and conventions of classical European architecture needed to handle this kind of thing with even a minimum of competence. There are no exceptions to the resultant pastiches and caricatures that publicly dishonour the spirit of precisely that heritage which we think we are respecting.

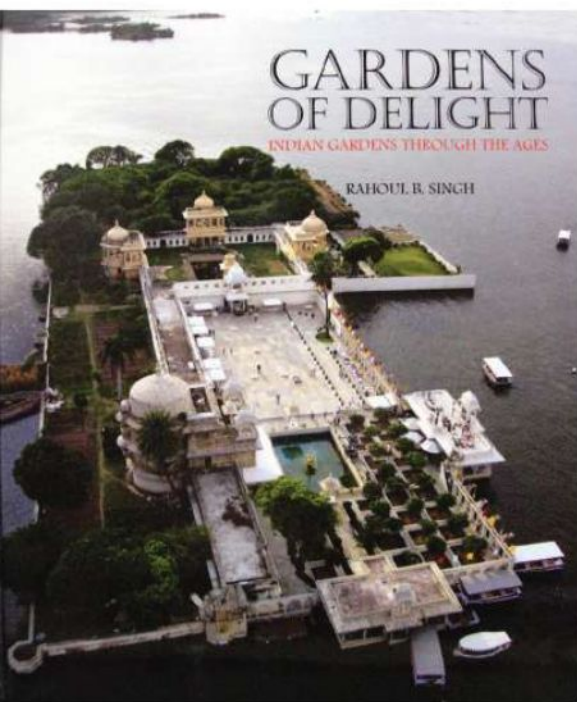
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1. A map published in the Sphere 8 February 1913 showing the two locations under discussion for the building of the new capital, on page 13 of the book.
2. Robert Byron, *New Delhi; The Architectural Review* Jan 1931; Reprinted: Asian Educational Services 2007

An abridged version of this article was published in 'The Week'

Landscape architect and academician **M. Shaheer** can be contacted at [mshaheer27@gmail.com](mailto:mshaheer27@gmail.com)





**GARDENS OF DELIGHT**  
Indian Gardens through the ages

Author **Rahoul B Singh**

Lustre Press / Roli Books 2008

Hardback | 260mm x 300mm | 192 pp

ISBN 8174366792

Book Review by

**Sathya Prakash Varanashi**

# GARDENS OF DELIGHT

INDIAN GARDENS THROUGH THE AGES

**B**ookshops today welcome us at the entrance with shelves packed with large format books with glossy finishes and produced on art paper. I would routinely browse there, but skip them while actually buying. Coffee table books are required, but not when we are seeking technical inputs as well. However, there appear to be few exceptions. Lavishly illustrated by some breathtaking photographs, edited deftly and well-produced, the book *Gardens of Delight* by Rahoul Singh is both a visual treat and an academic reference. It is a rare example for a good synthesis of text book and coffee table book.

Tracing the gardens of India on a single canvas is a nearly impossible task, considering the diversity of gardens in the sub-continent. What ever has been observed and published till recently, are not adequately categorized, theorized and positioned for a deeper understanding. It is good to see this gap being filled by few attempts, and the book under review deserves a worthy mention.

*Gardens of Delight* provides a glimpse of the wide range of gardens in India, classified and analyzed. Aerial view images and wide angle photographs communicate the landscape designs at their

best, both to a novice and a technical expert. My personal liking for the book started when the author mentions dedication to the *maali* (gardener), normally a forgotten entity who actually creates the physical form of design ideas. The later part of the book focuses more on the patrons, either people or contexts, and it would have been good to read more about people like *maalis* as makers of gardens. Unfortunately, the archival information is weak on such people.

Though the book is titled as gardens, suggestive themes and references to other types of landscape interventions keep cropping up. Parks, playgrounds, *ghats*, *chowks*, *maidans*, temple streets, sacred groves, archaeological sites, farm house gardens and such others have evolved across India as places of public gathering. While some continue to be urban landscapes, some have morphed into shopping or vehicular areas. It would have been good to look into related terminologies, not only for non-professionals who may appreciate some clarity on these interrelated terms, but even towards a wider discussion by designers.

The coffee table appearance of the book could be justified by the profusion of grand narratives of garden history. The



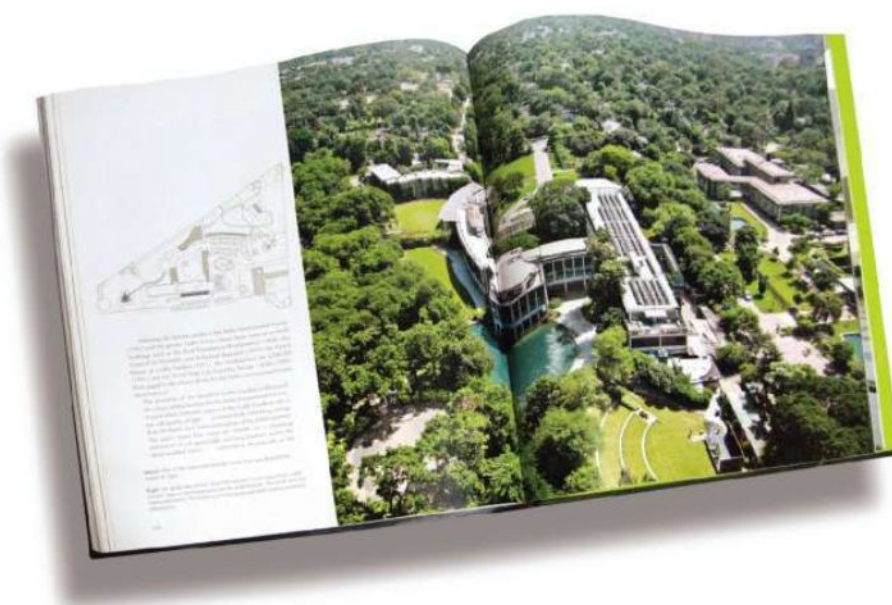
intention possibly was to cover the ambitious pan-Indian range. A variety of landscape types, issues and theory find a mention somewhere in the text, providing a useful checklist to a student of landscape. I would like to specially mention the role of sacred trees like *kadamba*, *neem* or *parijata* in the Indian landscape, briefly discussed here, which are normally bypassed in contemporary designs in civic and corporate spaces. A section on garden styles abroad, though informative, appears inappropriate in its location, by breaking the otherwise smooth narrative of chapters. If this compilation was felt needed, it could have been an appendix or reference notes.

While the intent of covering India is well appreciated, the book appears to provide lip service to landscapes of lesser grandness. Cultural landscapes such as Champaner, the neighborhood parks of Bangalore, waterfronts such as that at Varanasi, historic and emerging terrace gardens, landscapes of the Indian Institutes, archaeological parks such as Hampi and private spaces with the *tulsi* plant or *kolam* patterns could have found a mention here, however briefly. This is not to suggest overloading the book, but only further enriching it as an exhaustive source book on gardens of India, creating an overarching reason for everyone interested in landscape to possess it.

It is appropriate to showcase Konark as a temple complex, but presenting it as a temple garden or Jantar Mantar as a historic, both of which presently showcase the garden by Archaeological Survey of India does not appear authentic enough for this otherwise well researched book.

The modern India section dwells around new gardens, yet deals with pre-independence ones as well. There are no apparent criteria for selecting the projects under the section such as creating continuity, innovative materiality or breaking from the past. However, this section is a fitting way to end the book, providing a glimpse of contemporary landscapes and gardens.

The strength of a book does not lie in the omission of information but lies in the selection of topics. Gardens of India has been careful in its selection of both visuals and text, making reading the book a delight. Much of the analysis is eminently readable, despite its academic depth. I assume, the author being a professional, makes a difference to the subject.



The book claims, in the introduction, to present a relationship between civilization and garden history. It concludes stating gardens have played a definitive role in the making of a cultural landscape. It would have been good to see the book ending with some analytical notes on related issues as a synthesis of all the information provided. The ending is rather sudden, at the point where we delve into contemporary business parks and leaves the reader with an inconclusive feeling.

Lavishly illustrated in colour and printed in large format art paper, it curiously transcends being only a glossy production due to in-depth information, images and technicality. We need more books of this genre.

**Sathya Prakash Varanashi** is an architect with Urban Design and Conservation backgrounds. He lives in Bangalore teaching, writing, designing, networking and organizing events. He can be reached at: [varanashi@gmail.com](mailto:varanashi@gmail.com)





Landscape practices  
in India are currently  
working on...

**ROOTS LANDSCAPE ARCHITECTS PUNE**  
Principal Landscape Consultant  
**Umesh Wakale**



**KTMS Guesthouse, Pune**  
Architect **AA Studio, Mumbai**  
Expected Year of Completion  
**December 2011**

*Total area of 27 acres of which 17 acres of high-end landscape development and second phase with 10 acres of average /low maintenance areas, landscape design intends to create a setting for a classic villa footprint of 36,000 sq.ft.*



**Pipliyapala Regional Park, Indore**  
Architect **Mehta & Associates, Indore**  
Expected Year of Completion **May 2011**

*Encompassing about 40 acres of land along lake Pipliyapala of Indore, the project aims at rational land management policy which will provide the city people with ample amount of recreational facilities alongwith an ecological up-gradation of the zone.*



**Orchid Engineering & Management Institute, Nashik**  
Architect **Swastikarch, Nashik**  
Expected Year of Completion  
**December 2010**

*An institutional campus development of 22.5 acres abutting an existing residential school premise nestled in the Shayyadri Hills near Nashik. With a mere 18,500 sq.m. built up, rest of campus sits on a highly contoured site.*



**Mahindra Royale, Pimpri-Pune**  
Architect **Access Architects, Mumbai**  
Expected Year of Completion **August 2010**

*This 10 acre project is about a typical urban residential complex with clear central open space surrounded by uniform built mass, divided by a club house, the challenge being providing identity to the frontage of these identical facades through landscape design.*

**DESIGN ACCORD CONSULTANTS**  
NEW DELHI  
Principal Landscape Consultant  
**Madhup Mazumder**



**Redevelopment of India Gandhi Sports Complex, New Delhi**  
Expected Year of Completion **October 2010**



**International Terminal at Amausi, Lucknow**  
Expected Year of Completion **October 2010**

*A large foreground garden distinctly designed with a public concourse, a central pedestrian plaza square with large waterbody and bold forms aim to bring in the international flavour.*



**Kolkata Museum of Modern Art, Kolkata**  
Expected Year of Completion **November 2013**

*Marked by a striking feature of central courtyard to house events and art forms, amphitheatre plaza with small artisan's workshops, articulation of spaces and treatments as key features of the proposed landscape design.*

**Premium Residential Complex, Muscat**  
Expected Year of Completion **June 2012**

*Guided by the traditional geometry of the Arabic world of garden designs further simplified in a modernist approach.*



**THE LANDSCAPE COMPANY** BANGALORE  
Principal Landscape Consultant  
Prashanta Bhat



**CISB-HT1, Hyderabad**  
Architect **InFORM Architects Pvt. Ltd., Bangalore**

*CISB-HT1 is a housing/residential project for the faculty of Indian School of Business, Hyderabad. It is a LEED certified project.*



**Golf Retreat, Hyderabad**  
Architect **SDeG, Bangalore**

*Golf Retreat is a 300 acre super-luxury community living with a golf course and a 5 star hotel in Hyderabad.*



**Chartered Beverly Hills, Bangalore**  
Architect **Arun Nalapat Architects, Bangalore**

*Chartered Beverly Hills is a residential complex in south of Bangalore. The landscape has been designed with a character of community living interaction and functional spaces that include outdoor seating and activities.*

**DESIGN MILIEU** BANGALORE  
Principal Landscape Consultant  
Kannan Somasundaram



**CARE Campus, Trichy, Tamil Nadu**  
Architect **Mindpace, Sanjay Mohe**  
Expected Year of Completion **2011**

*An engineering college with an area of 18.0 acres, part of a larger campus of 200 acres.*



**The Elements, Bangalore**  
Architect **Mindpace, Sanjay Mohe**  
Expected Year of Completion **2012**

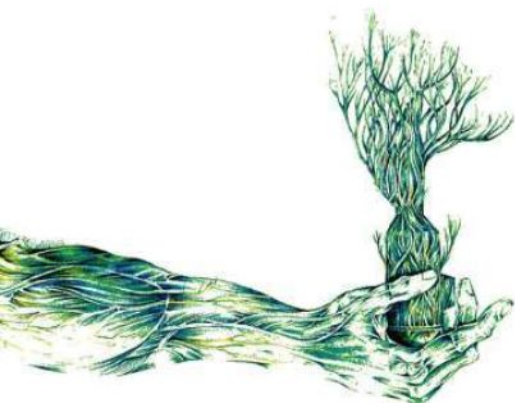
*A residential project with a site area 14.0 acres in a linear shape to accommodate 31 exclusive villas.*

**Salarpuria Greenage, Bangalore**  
Expected Year of Completion **2012**

*Salarpuria Greenage is a 20-acre residential complex project, with HoK, USA as the Principal Architects and Cracknel, UK as Landscape Architect consultant.*

**Prestige Southridge, Bangalore**  
Expected Year of Completion **2010**

*This is a 10-acre residential complex development within a rocky site.*



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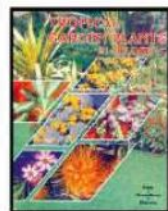


# ON THE SHELVES!



**Trees of Delhi: A Field Guide**  
Author: Pradip Krishen  
Publisher: Dorling Kindersley (India), 2006  
150mm x 210mm | RS. 799/-

**Trees of India**  
Author: Dr Subhadra Menon  
Publisher: Timeless Books, 2004  
240mm x 310mm | RS. 3000/-



**Tropical Garden Plants in Colour**  
Edited by: T.K. Bose, B. Chowdhury and S.P. Sharma  
Publishers: Horticulture & Allied Publishers, Kolkata  
Publishing Year: 1991, reprinted 2001 | RS. 2000/-

**The Small Garden Handbook**  
Publisher: Abbey | RS. 860/-



**Time Saver's Standards for Landscape Architecture, 2/e**  
Author: Harris | Publisher: MGH  
RS. 7700/-



**Flora: A Gardener's Encyclopedia**  
Introduced by: Prof. C K Rao  
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RS. 4500/-  
Set of 2 books, includes CD rom, covers over 20,000 plants organized in A-Z format, with 11,000 color photographs

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Author: Francis D K Ching  
RS. 2205/-

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Author: Francis D K Ching  
RS. 1500/-

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Author: Spens, 2003  
RS. 3600/-

**The Timeless Way of Building**  
Author: Christopher Alexander, 1979 | RS. 2750/-

**Sustaining Architecture in the Anti Machine Age**  
Author: Abley | RS. 2550/-

**Sustainable Urban Landscape**  
Author: Minguit, 2008  
RS. 3000/-

**Handmade in India**  
Aditi Ranjan and M.P. Ranjan Mapin | RS. 3950/-

**The Water House Albums Central India Provinces**  
Crill, Gray, Khan Mapin | RS. 3250/-

**The Complete Taj Mahal**  
Author: Ebba Koch  
Publisher: Bookwise (India) Pvt. Ltd., 2006-7  
240mm x 290mm | RS. 3000/-

**Experiential Landscape**  
Author: Thwaites, 2007  
RS. 3360/-

**Indian Modern**  
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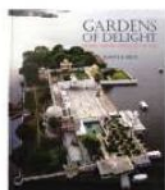
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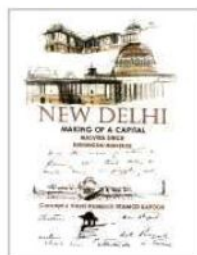
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The word *Ailanthus* is derived from *ailanto*, a vernacular name of Moluccas island meaning 'tree of heaven', *excelsa* is Latin means 'lofty'.

### Family

Simaroubaceae

### Common Names

Maharukh, Mahanimb, Mettigongil, Aralu, Jungli Sarva, Tree of Heaven

### Distribution

The tree is indigenous to drier parts of central, east and southern India. It is also commonly grown in Vadodara, Gujarat and Uttar Pradesh.

### Description

Maharukh is a large, lofty, quick growing and deciduous tree with round to slightly oblong crown. The stem is stout, cylindrical and smooth with bark of vertical fissures. The branches, not much divided, grow at right angles to the stem, and then curve upwards. The bark is light grey, granular and nearly smooth. The tree grows to a height of 12 to 16 meters and has a spread of 14 to 19 meters.

The leaves are compound and are dull green in colour, with many pairs of leaflets, at times about a foot long. They are clustered near the ends of branches and spread in all the directions. The leaflets are arranged nearly opposite each other. They are broad, soft and irregularly toothed. They fall from February to April and the new leaves appear in June–July. The tree is leafless during hot weather.



Image credits: LEFT Dr Rajesh Kalra | delhitrees.com | RIGHT ndmc.gov.in

# Ailanthus excelsa Maharukh

The flowers are very small, whitish of yellowish green, arranged in open panicles which are shorter than the leaves. They appear from February to April and are not very prominent. The fruit consists of a few reddish brown, light paper like pods which ripen in May–June. It has strong light requirement.

### Climate

It grows in a wide range of climatic conditions and is fairly drought resistant. It requires mean annual rainfall of 500–2500 mm. It can also withstand frost but young plants are sensitive to it.

### Soil

It can be grown on any type of soil but prefers sandy loam. It can also tolerate alkaline and saline soils. It does not tolerate water logging.

### Propagation & Training

It is generally raised by seeds and cuttings. The seeds are sown soon after harvest. The young plants need protection from frost. In places where the winters are damp, it is usually raised by cutting. It required some training but little pruning afterwards.

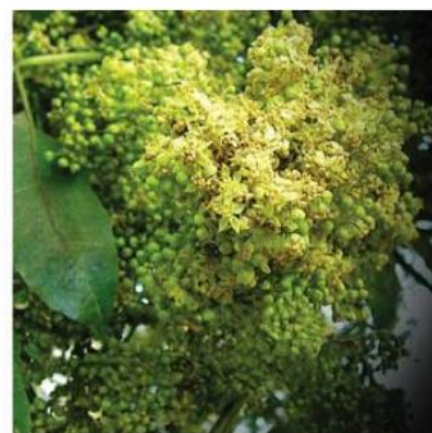


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### Uses

It is a lofty deciduous tree with handsome foliage. It is often planted on roadsides for its shade. Being good soil binder, it is also proposed for controlling soil erosion. It is recommended for shelter belt plantation. As commercial use, it is often used for light packing and toys.



12 – 16 m

14 – 19 m





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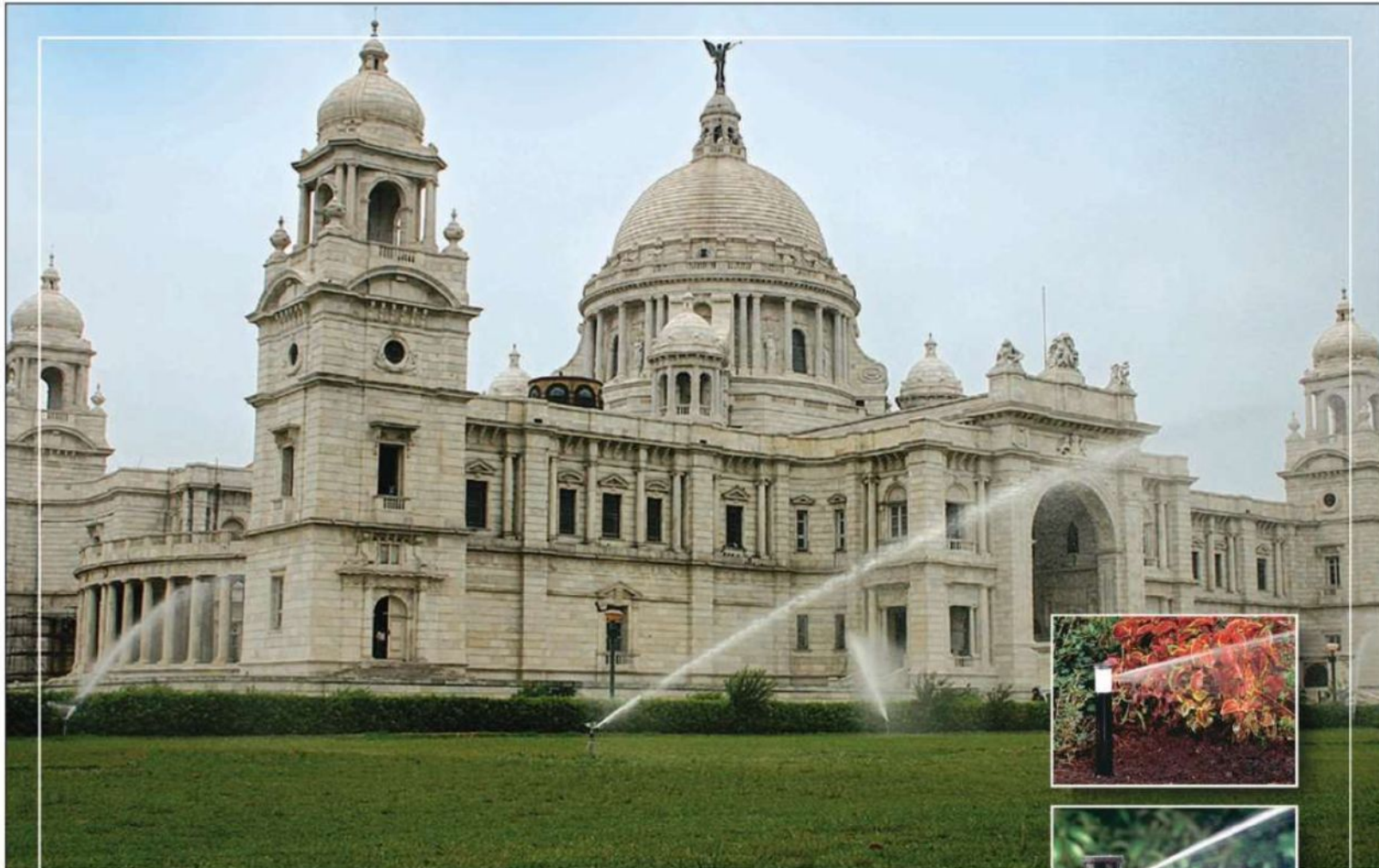
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